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Reports of a consolidation of the silver-lead producers of the Coeur d'Alenes, which have been current for some time past, are again repeated. It is impossible at present to ascertain the truth of these rumors, as the chief parties in interest decline to make any statements. Previous consolidations in the district make a further combination comparatively easy, by reducing to a small number the interests to be considered. Should such a consolidation result, there is little doubt that it will be closely allied to the American Smelting and Refining Company.

The extent to which the British iron trade is disturbed by present conditions is shown by the meeting of the Iron & Steel Interest, which is in session in London this week. The cable reports indicate that the meeting is almost entirely given up to the discussion of American competition and American practice. Prominent men in the Institute are urging the necessity of changes and of a general remodeling of British steel works, if they are to retain their position in the trade. The speeches reported are for the most part highly complimentary to American metallurgists, and doubtless will have much effect on opinion in British iron circles.

The Amalgamated Copper Company is now going through a legal ordeal in the New Jersey courts very similar to that which the American Smelting and Refining Company had to face recently. The suit, which is being tried this week, is brought by a stockholder who asks the court to enjoin the company from buying up the stocks of the Boston & Montana and the Butte & Boston companies. The complaint charges that the stockholders are not informed of the terms of the purchase, and also intimates that the price to be paid is too high. The proceedings this week have not been of especial interest, being confined mainly to the filing of affidavits relating to the value of the properties to be purchased. The court is apparently following the lines laid down in the American Smelting case. No forecast of the decision is possible at the present time.

The break in selling values of stocks on Wall street this week has caused almost a panic on the exchanges, and doubtless heavy losses to many who have been speculating there. It was to be expected, for all past experience shows that a wild speculation, such as we have seen for some weeks past, must end in a disastrous fall. The later speculation has been confined chiefly to railroad stocks and the break has affected mining stocks only to the extent of the sympathetic decline which all securities experience at such times. While, as we said above, the reaction was certain to come, few expected that it would come so soon. In this also the regular course of such movements in the past has been repeated. Fortunately the general business of the country is in a sound condition, and we believe that it will not be seriously affected by a stock exchange reaction.

We have frequently referred to the possible advantages of the use of gas plants and gas engines in mining operations. The saving which can be effected by such plants under certain conditions has been well illustrated at the works of the Detroit Copper Company in Arizona, and at those of the Arizona Copper Company at Clifton in the same Territory. On another page we give a description of a new plant of this class which has lately been installed at the Nacosari Mines in Mexico. This plant is peculiar in one respect, the power for all the operations being generated at a central station and transmitted to different parts of the works by electricity. The electric generators are driven by gas engines entirely, the only steam used being that made in the small boilers which are adjuncts to the gas producers. The plant is a large one and is now working satisfactorily. We hope to supplement this account later by descriptions of other plants of the same class.

The opening of the Pan-American Exposition at Buffalo has been accomplished with less ceremony than usually accompanies such occasions and perhaps with less than the importance of the Exposition demands. Although it claims to be "Pan-American" only and and not "universal," there is no doubt that in certain points—among which are the extent and beauty of the buildings, the completeness of many of the exhibits, and the provisions for the comfort of visitors—it exceeds any of the earlier great expositions. Great credit is due to the managers and to the people of Buffalo who have supported them in their enterprise. We believe they will be rewarded by a great attendance of visitors.

It is also a source of gratification that the Mines Exhibit, under the able charge of Dr. David T. Day, is the most nearly complete of any of the exhibits at this early date. We hope to present a full description of the Mines Building and its contents in a series of articles, to be begun in an early number of the "Engineering and Mining Journal."

It is intimated that the policy of the United States Steel Corporation will be to concentrate its work as far as possible in those plants in

which it can be done most economically. This would mean for the present the placing of as much work as possible in the Pittsburg District and in the plants around Chicago, which were included in the Illinois Steel Company. It would also mean the practical abandonment of a number of the smaller and older plants controlled. Of course the changes will have to be made gradually and the complete execution of such plans will take some time. This is not officially announced, nor is it likely to be; but that some such plans will be adopted is altogether probable. They are entirely in accordance with the known intentions of those who control the policy of the company. Moreover, such a course will be necessary, if the company is to earn profits for its stockholders. To keep a number of old plants at work will not accord with that end. The changes required by this plan will, of course, be accompanied by a good deal of friction, as all such changes must be; but this will hardly affect the company's purpose, if it has really been decided.

MANUFACTURERS' CATALOGUES FOR REFERENCE.

An extract from a letter which we received recently from an engineer in active practice ought to be of interest to manufacturers of machinery and other supplies that mining engineers and metallurgists have to use. It is this: "A well-known manufacturer of machinery lately sent me a catalogue of his machines. Slipped between its pages were half a dozen printed cards, each one showing briefly what types of machines were made by the manufacturer in question, classified for convenient filing with proper cross references. These cards were punched at the bottom for slipping over the rod in the conventional index boxes. Examination showed that they were of the same size as the cards in my index of manufacturers, 5 by 3 inches, a regular size which is supplied by the concerns which make a specialty of systems of filing and indexing. All that was required of me in this case, therefore, was to have the cards distributed alphabetically in my index, and I was not only saved the trouble of having cards written, but the danger of vagaries in cross-indexing on the part of my clerk were eliminated. In the course of an extensive correspondence with manufacturers this is the first who has presented this idea, which strikes me as a good one."

It strikes us also as a good one, involving but little expense to the manufacturer and insuring that he will not be overlooked when orders are to be placed. There would be a difficulty perhaps because of lack of uniformity in the size of cards used by various engineers and mining companies, but the number of filing systems is not very great and there are probably only a few standard sizes of cards. It would not entail much expense on the manufacturer to have printed index cards of his own goods in a variety of sizes.

In this connection it is worth while to call the attention of manufacturers again to the desirability of making their catalogues and other publications of a uniform size. A collection of their catalogues is a part of the stock in trade of the consulting and constructing engineer. When they come in sizes ranging from a large folio to one that can be put in a waistcoat pocket the method of filing becomes a good deal of a problem. Some will be found too big to go into any ordinary cabinet and others will be entirely too small to conform to the system. The American Society of Mechanical Engineers several years ago recommended 6 by 9 inches as a standard size for machinery catalogues, and a good many manufacturers have adopted it. It is a convenient size for filing in a cabinet or for standing vertically on ordinary book shelves. The pages are large enough for printing any engraving that the manufacturer would need to use. If all manufacturers would adopt that size it would be possible to bind into one book for reference such catalogues as are most used or found desirable; and any other system of filing that might be preferred would be easy. With the increasing complexity of engineering work in this age of great industrial development systematic methods of filing documents become more and more imperative, but in order to carry out such systems uniformity is essential.

THE NEW SILVER-LEAD ORE SCHEDULE OF THE AMERICAN SMELTING AND REFINING COMPANY.

The new schedule of payment for silver-lead ores submitted toward the end of last month by the American Smelting and Refining Company to the miners of Colorado has excited bitter opposition among the latter, as was perhaps to have been expected. We are of the opinion, however, that the objections to the new contract which have been voiced by the Denver press are based upon an imperfect understanding of the terms of the proposed contract and the conditions which now govern the silver-lead smelting industry of the United States.

According to the new contract (which is to extend for the period of five years) each mining company which enters into it agrees to sell to the Smelting Company, and the Smelting Company agrees to buy from the mining company, at the prices and upon the terms and conditions stated in subsequent sections of the contract, its entire output of ores up to a maximum of 200 tons per month, the Smelting Company reserving the option to accept or reject any surplus above that amount. The Smelting Company agrees to pay for the silver contents of ores 95 per cent. of the value at New York as quoted by the Western Union Telegraph Company on the date of the bill of lading; for the gold at the rate of $19 per ounce if the ore contains 0.05 ounce or more; and for 90 per cent. of the lead contents at the price paid for lead agreed upon with the majority of the Coeur d'Alene miners, or at the actual average daily sales price in New York of the previous week less 12.5 cents per hundredweight. Excess of iron is to be paid for at the rate of 15 cents per unit, but no charge is to be made for excess of silica. Zinc goes free up to the extent of 10 per cent.; above that limit, 50 cents is to be charged for each unit in excess.

From the gross value of the ore computed in the above manner $17 per ton is to be deducted in the case of ores of which the net value does not exceed $20 per ton; $18.50 for ore of net value between $20 and $35 per ton; and $20 per ton on ores of net value of $35 per ton and over. The net values are the differences between the gross values and the charges. The latter are based on a railway freight rate of $11 per ton on ore valued at $50 per ton and over, and $10 per ton on ore valued at less than $50 per ton for full metal contents. Any reduction or increase in the freight rates is to be deducted from or added to, as the case may be, the graduated charges fixed as above. Thus if the freight rate were only $5 per ton the charge on ore of less than $20 per ton net value would be $17 — $5 = $12. Moreover, if during the existence of the contract the price used in settlement for the lead be less than $3.50 per 100 pounds, the treatment charge is to be reduced $1 per ton; on the other hand, if the price of silver exceeds 65 cents per ounce, one-third of the excess value over 65 cents per ounce is to be deducted from the price of silver used in settlement for ore under the contract.

Besides the above stipulations the only important clause in the contract is that which permits the Smelting Company, in case it is not able without serious loss to itself to purchase a particular combination of ores for smelting, to suspend the contract until it can obtain such a combination; the miners are given the privilege, however, of consigning their ores elsewhere during the period of such suspension.

We are of the opinion that after reflection the miners of Colorado will perceive that the terms of the contract are neither exorbitant nor as a whole unreasonable, although in some particular cases they may work out less favorably than at present, as would be inevitably to be expected from such a broad blanket form. Deducting the railway freight rates used as a basis in the contract the smelting charge on ore up to $37 gross value per ton is $7 per ton, and on ore of over $55 per ton gross value $9 per ton, ores of intermediate values receiving intermediate rates. These are certainly moderate charges for silicious ores. In the case of ores containing an excess of iron a liberal allowance is made for the iron, which reduces the smelting charge correspondingly. Even more liberal is the extent to which zinc is permitted to go unpenalized.

With respect to the rates of payment for the valuable metals, the basis of 95 per cent. of the price of silver at New York as per Western Union quotation is the same as has been employed for many years. The rate of $19 per ounce of gold, when the tenor in that metal is 0.05 ounce or more, is also the same as has been in effect for a long time, except recently in the case of the Cripple Creek ores, for which the competition of the chemical reduction works has compelled the payment of $20 per ounce. It is no underhanded piece of extortion to pay the miner only $19 an ounce for his gold, since the margin which thereby results to the smelter is only what he might otherwise fairly add to the smelting charge. In permitting himself such a margin on the gold, however, he practically establishes a sliding scale for treatment according to the gold value of the ore in a manner which is easily understood and conveniently calculated.

The method now proposed for the payment for the lead contents of ores is a departure from the old method of so much per unit according to a sliding scale determined by the New York price. We do not know what is the basis agreed upon with the Coeur d'Alene miners, and inasmuch as it is not specified in the proposed contract with the Colorado miners we are of the opinion that the latter have good grounds for objecting to that part of the contract. No one likes to go into a thing blindly. The alternative proposition to pay for 90 per cent. of the lead at the New York price of the previous week, less 12.5 cents per 100 lbs. is apparently fair enough. On the latter basis the new method is more scientific than the old one, capable of a clearer understanding, and on the whole no more unfavorable to the miners. It is true that the smelters in good practice save more than 90 per cent. of the lead, just as in the case of silver and gold they save more than 95 per cent. of those metals, but the difference is a margin which the smelter may fairly allow himself, and the freight rate on lead from Denver and Pueblo to

New York is a good deal more than 12.5 cents per 100 lbs. As to the Smelting Company itself making the price of lead upon which settlements are based, it may be remarked that it is precisely what has been done during the last two years and to the great advantage of the miners.

We do not consider that the American Smelting and Refining Company is in any way attempting to hold up the mining industry of Colorado and the other Rocky Mountain States; on the contrary, we are of the opinion that the Smelting Company appreciates that its interests and those of the miners are to a large extent identical and realizes that if the mining industry suffers its own interests will also suffer. Naturally the smaller miners will be slow to perceive this and will be likely to continue to look upon the Smelting Company with the suspicion that most people have against a trust which enters their particular industry until experience demonstrates that no injury is intended or induced. The record of the Standard Oil Company, whose policy the American Smelting and Refining Company is accused of pursuing, shows that irrespective of the ruthlessness with which it may crush out competition in the transportation and refining of oil, it nevertheless encourages the producers of crude petroleum and permits them to realize good profits, because it is to the interest of the refining company that the producers should be successful. The American Smelting and Refining Company has succeeded during the last two years in maintaining the price of lead at a high level, which has resulted to the great profit of all the miners whose ore has contained lead.

Without doubt the company now realizes that it cannot continue to hold up the price of lead unless it has the power to restrict production if necessary. We conceive that the clause in the proposed contract with respect to the output that may be received from the mines aims to give the Smelting Company that power, without which even the great resources of the company must necessarily fail, because after all the price is still regulated by supply and demand and the recent high range of prices has greatly stimulated the supply and probably restricted the demand; at least the demand has probably not increased in the proportion it ought normally to have done.

With respect to the right to suspend the contract reserved by the Smelting Company, it must be remembered that the latter is now the only purchaser of silver-lead ore and that it requires a certain proportion of iron ore and silicious ore to carry out economically its smelting process. If there be an excess of either, the excess cannot be smelted except at an increased cost, wherefore the company must necessarily hold to the power to regulate the supply of different kinds of ore. As to the large proportion of the value of silver in excess of 65 cents per ounce which is claimed by the company, we conceive that it indicates an attempt on its part to enhance the value of silver. If the Smelting Company proposes to engage in any undertaking so hazardous as that, we are of the opinion that it deserves at least one-third of the excess and the miners may cheerfully yield that point and congratulate themselves upon whatever additional earnings they may realize.

We have not ventured these arguments as an advocate of the American Smelting and Refining Company. As between it and the miners our sympathy is with the latter, the men who constitute the foundation of the industry, who take the greatest risks and ought to reap the greatest profits. They need the smelters, however, and the smelters need them; and it is our conviction that the interests of the two parties are so nearly identical that neither can afford to do any serious harm to the other. Without admitting that the policy of the Smelting Company of increasing the price of lead in the United States to the extent which it has done is a sound one, it cannot be denied that it has so far benefited the producers—that is, the miners—and can be continued successfully only by the course which the company has now taken to throw part of the burden on them. There are points in the proposed ore contract which we should desire to have modified or more clearly expressed if we were going into it, but in being compelled to accept it without discussion the miners are confronted by a condition and not a theory.

NEW PUBLICATIONS.

"Bases Fondamentales d'une Loi Universelle sur les Brevets d'Invention." By Henri Hauser. Madrid, Spain; Enrique Teodoro. Pamphlets, pages, 16.

In this pamphlet the author comments briefly on the defects of the patent systems of different countries, and the heavy taxes which some governments levy upon the inventor. He gives high praise, however, to the patent law of the United States, apparently considering that the best existing system. Finally the author advocates an international conference for the purpose of devising and adopting an international system of protection for inventors; the reasons he gives being generally excellent.

"Third Annual Report of the Bureau of Labor and Industrial Statistics of the State of Virginia, 1900." James B. Doherty, Commissioner. Richmond, Va.; Public Printing Office. Pages, 288.

The Bureau of Labor of Virginia has been established only three years, and during that time has done very creditable work. It had in the first place to make its purposes and intentions known, and establish itself in public confidence. Much of this preliminary work has been accomplished and the Bureau is now working under much better conditions than at first. It has a wide field of investigation and is doing much in the collection and preparation of statistics of value to the industries of the State.

"Tasmania. Report of the Secretary of Mines for 1899-1900." W. H. Wallace, Secretary. Hobart, Tasmania; Government Printer. Pages, 326; illustrated.

This volume, besides the Secretary's introduction and statistical statements, includes reports from the Government geologist, the mine inspectors and water commissioners. It has also descriptions of a number of important districts and individual mines. In short, it presents an interesting summary of the present condition of the mining industry in Tasmania. The total value of the mineral products of the colony for the fiscal year ending June 30th, 1900, amounted to about $8,850,000, the most important item in the industrial production of the Colony.

"Inventors' Manual. How to Work a Patent to Make it Pay." New York; Norman W. Henley & Co. Pages, 116. Price, $1.

This little book contains many useful hints and directions to inventors on the business side, in which many students and designers are apt to be deficient in knowledge. It presents some very sensible ideas on the subject of patents and their value—the latter a point on which false and mistaken ideas are widely current. The best ways of disposing of a patent, or of bringing a patented device before the public are indicated. At the same time there is not too much generalization, for as the preface says, "no specific directions can be given for prosecution in any particular case. Each patent requires special treatment." The book makes no unwarranted claims, and is certainly practical and likely to be useful to those for whom it is intended.

"Canada. Summary Report of the Geological Survey Department for the Year 1900." George M. Dawson, Director. Ottawa, Canada; Public Printers. Pages, 204; with maps.

This volume is the progress report, giving a general summary of the work of the Geological Survey during the year. Of the special papers on different subjects, which go to make up the complete volume, nearly all have already been issued separately, and most of them have already been noticed in our columns. In the present section, besides the general outline of the work, prominence is given to the results of field work accomplished during the past season. Perhaps the more important part of this work was that done in British Columbia and the Yukon; but a good deal of exploration was carried on also in Ontario, as well as in Quebec, Nova Scotia and New Brunswick. The volume shows an excellent record of work done.

"First Aid to the Injured and Ambulance Drill." By Dr. H. Drinkwater. London, England; J. M. Dent & Company. Pages, 104; illustrated.

This little book is condensed from a series of lectures on ambulance work, and is the result of long experience. The author says that while there are some excellent books on the subject, some are too elaborate and others too theoretical. He has therefore endeavored to make his book as clear, direct and practical as possible, both in text and illustrations. In this he has succeeded very well, and seems to have covered concisely almost every probable case of accident. The book is not too long to be studied carefully and thoroughly; and it is also very fully indexed, so that it is easy to turn at once to the directions immediately needed. Such a book will be very useful in a large mine or a mill where many people are employed and accidents are liable to occur at any time.

"Thirty-first Annual Report of the Board of Directors of City Trusts of the City of Philadelphia. For the Year 1900." Philadelphia; printed for the City. Pages, 240; illustrated.

The City of Philadelphia has some large funds arising from bequests of property made for public purposes. These are managed by the Board of City Trusts, which presents its report for 1900 in this volume. The most important of these trusts is the Girard Estate, and this derives a considerable part of its income from the anthracite coal lands which were bought up as wild lands at a nominal price by Stephen Girard, a century ago. The special report on these coal lands and their operation, presented by Mr. Heber S. Thompson, as engineer of the estate, contains this year, as usual, much valuable information about anthracite coal which is not elsewhere available. The production from the Girard Estate collieries is considerably over 1,000,000 tons yearly, and the accounts of the Trust are closely kept and carefully presented.

"Maryland Geological Survey. Allegany County." Prepared under direction of William Bullock Clark, State Geologist. Baltimore; the Johns Hopkins Press. Pages, 324; illustrated and accompanied by Atlas.

The issue by the Maryland Geological Survey of the present volume on Allegany County inaugurates a new series of reports dealing with the physical features of the several counties of Maryland. Not only the geology and mineral resources of Allegany County are considered, but also the physiography, soils, climate, hydrography, magnetic declination, forests and life characteristics. The geological chapters are limited to a descriptive discussion of the stratigraphy and structure, the systematic treatment of the geology and the paleontology awaiting later consideration.

The introduction contains a brief statement regarding the location and boundaries of Allegany County and its chief physical characteristics. The Physiography of Allegany County, by Cleveland Abbe, Jr., embraces a discussion of the surface characteristics of the region, including not only a description of the outward forms, but presenting reasons for their existence and reciting the processes by which they have been produced. Dr. Abbe's general report on the physiography of the whole State in Volume I of the Maryland Weather Service is here supplemented by a detailed discussion of the physiography of Allegany County.

The Geology of Allegany County, by Cleophas C. O'Harra, deals with the stratigraphy and structure of the county. An historical sketch is given of the previous work done in this field, to which is appended a complete bibliography. The chapter dealing with the interpretation of the sedimentary record deserves especial mention since it gives an interesting history of this portion of Western Maryland.

The Mineral Resources of Allegany County, by Wm. B. Clark, C. C. O'Harra, R. B. Rowe and H. Ries, deals with the economic wealth of Allegany County, contained in its rocks—the coal, brick, cement and other industries being described.

The Soils of Allegany County, by C. W. Dorsey, contains a discussion of the leading soil types of the county and their relation to the several geological formations. It is an important article, showing the close relations between the soils and geological formations. This investigation was conducted under the direct supervision of Prof. Milton Whitney, Director of the United States Soil Survey of the Department of Agriculture, who detailed Mr. Dorsey to carry on the actual work in cooperation with the Maryland Geological Survey. The Climate of Allegany County, by O. L. Fassig, is a valuable digest of the leading climatic features of the county. Dr. Fassig is a section director in charge of the Baltimore office of the United States Weather Bureau. The Hydrography of Allegany County, by F. H. Newell, gives an excellent account of the available water power in the upper Potomac basin. Mr. Newell is the chief of the Division of Hydrography of the United States Geological Survey, and his paper is an important contribution to the hydrography of Allegany County. The Magnetic Declination in Allegany County, by L. A. Bauer, contains much important information for the local surveyors of the county. Dr. Bauer is the chief of the Division of Terrestrial Magnetism of the United States Coast and Geodetic Survey and has been engaged for several years past in making a magnetic survey of Maryland under the auspices of the State Geological Survey.

The Forests of Allegany County, by G. B. Sudworth, is a contribution of much significance to the forestry interests of Maryland. Mr. Sudworth has studied the forestry conditions of the county with much care and has brought together many important facts regarding the present and future prospects of the lumber industry. Mr. Sudworth is dendrologist of the Forestry Division of the United States Department of Agriculture. The Fauna and Flora of Allegany County, by C. Hart Merriam and Edward A. Preble, contains a discussion of the life zones of the county, together with a list of the summer birds of Western Maryland. Dr. Merriam is the chief of the Biological Survey of the United States Department of Agriculture, and Mr. Preble one of his associates. They have been engaged in co-operation with the Maryland Geological Survey in a study of the life characteristics of the Appalachian region.

The brief summary above, which is condensed from the preface, gives an excellent idea of the contents of the book. We may add that the papers are generally excellent and that if the program of the Survey is carried out on the same scale for the other counties of the State Maryland will have a geological record not surpassed by that of any other State. The book is illustrated by maps, geological sections and a number of fine half-tone engravings, most of them from photographs taken in the course of the Survey work. It is accompanied by an atlas containing topographical and geological maps on a large scale.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Statistical Report of Western Australia." Compiled in the Registrar-General's Office. Perth, W. A.; Government Printer. Pages, 624.

"Missouri. Biennial Report of the State Geologist." Leo Galleher, Acting State Geologist. Jefferson City, Mo.; State Printers. Pages, 56.

"Elektrische Verbrauchsmesser der Neuzeit." By Johannes Zacharias. Halle, Germany; Wilhelm Knapp. Pages, 352; illustrated. Price (in New York), $5.

"Annual Report of the City Engineer of the City of Providence for the Year 1900." Otis F. Clapp, City Engineer. Providence, R. I.; published by the City. Pages, 96; illustrated.

"Transactions of the Australasian Institute of Mining Engineers." Volume VII. Edited by A. S. Kenyon, Secretary. Melbourne, Victoria; published by the Institute. Pages, 214; illustrated.

"A Hand-book of Trade, Industries and Productions." By Oscar Halvorsen. Madison, Wis.; Published by the Author. Pamphlet, pages, 66; with maps and illustrations. Price, 35 cents.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Assay of Bismuth Ores.

Sir: I have done considerable work on bismuth ores for the firm of Heckelmann & McCann, which is the largest of its kind in the Republic of Mexico, and should like through your columns to ask Messrs. A. W. Warwick and T. D. Kyle a few questions concerning their methods of assaying bismuth.

First. Do they "bake" when taking down to dryness with nitric acid? I find this makes a considerable difference in my results.

Second. Should the basic oxalate precipitate turn a straw color on boiling with water?

Third. Is it owing to the altitude of Mexico City and the consequent lowering of the boiling point of water which prevents the basic oxalate from dissolving completely on the final addition of sulphuric acid? Do they have any difficulty in this matter?

To me the filtration of insoluble matter after taking up in nitric acid seems very necessary, not only because during the subsequent operations one is able to watch each result, but for an actual saving of time. This is particularly noticeable in treating tailings and slimes. If Messrs. Warwick and Kyle would kindly answer my questions they would much oblige the writer.

Cecil C. O'Gorman.

City of Mexico, April 30, 1901.

The Golden Desert Mining and Milling Company.

Sir: Knowing that you like to be of service to the public and to the profession and that you have exposed many frauds from time to time connected with mines and mining, I send you a circular uttered and circulated by the so-called "Golden Desert Mining and Milling Company" which pretends to set forth a report from me in regard to a certain Arizona property. Though some of my words are used in this circular, it is, in the main, a garbled and wholly untrue extract from a report made for Mr. O. A. Pease. For instance, I say, "Reports on mere outcropping ledges are dangerous for many reasons, and any enthusiasm founded on surface samples is unwise. . . . Only in ton lots can any approximation to the real gold value be arrived at, and that only when the much weathered surface ore is stripped off and the real nature of the ore body better exposed."

On a prospect yet unopened it is proposed in this circular to erect a mill at once and to crush at least 100 tons a day. Dividends are guaranteed and, in short, a very ancient form of mining fraud is being attempted, with a falsification of a report from me as a guarantee. I can, perhaps, stand the abuse, but the investing and unsuspecting public cannot. Kindly publish this and oblige the writer.

W. M. Chauvenet.

St. Louis, May 3, 1901.

THE USE OF SAFETY LAMPS IN MINES.—The South Derbyshire Miners' Association in England has made a demand upon the coal owners of the district for an advance of wages on work done with safety lamps. They do not raise any objection to the use of safety lamps as a precaution against the loss of life; but their contention is that, while they are safeguards against explosions, their use, instead of the candle, is detrimental to the men's interests, so far as their wages and their eyesight are concerned. As a result of this movement, arbitration proceedings have recently been conducted, the result of which is not yet announced.

TESTS OF CANADIAN CLAY.—The "Clay Record" of recent date says that Canadian clay for the manufacture of vitrified brick and pottery ware has been tested in England and the results have shown that Canadian material is equal if not superior to any clay yet discovered in England. Recently C. V. M. Temple, Toronto, sent a shipment of Canadian clay to England and there it was experimented with in every process of pottery and tile manufacture. Brown clay shipped to manufacturers of glazed pottery was considered the finest sample ever seen and English experts suggested that owing to extreme closeness of grain and its non-absorbent qualities it should be used for hospital and lavatory purposes. J. E. J. Baxter, manager of the Phoenix & Bell works at Hanley, Stoffordshire, said that the vitrified brick produced from Canadian clay showed vitresence and durability unknown in English clay.

ALLEGED GOLD DISCOVERIES IN SAMOA.—In view of the fact that he has received many inquiries and that stories of discoveries of gold in the Samoan Islands have been published by American papers, United States Consul-General L. W. Osborne at Apia makes the following statement:

"I have from time to time made investigations, and if there are minerals—either gold, silver, mica, nickel, zinc, tin, or any other—in these islands, I have been unable to find them or to find any person who has any knowledge of the fact. If there is any 'Gold Mining Company of Apia' (as reported in United States papers), the records do not disclose the fact, and the officials have no information upon the subject. No steamers, schooners, nor other vessels are engaged in transporting sands or ores to Sydney, to San Francisco or elsewhere; no such persons as those named as constituting the 'Gold Mining Company' are known here, and, in my judgment, a tremendous swindle is being perpetrated, and the public ought to know the facts."

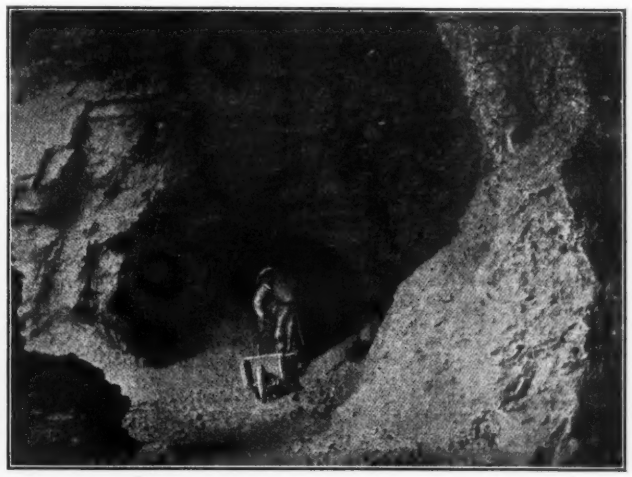
SIR LOWTHIAN BELL ON BRITISH TRADE PROSPECTS.—Sir I. Lowthian Bell, presiding at the annual meeting of Bell Brothers, Limited, at Middlesbrough, April 10th, said that one of the practical questions of the day was how far the district in which they lived and carried on business would be able to compete with other districts in all parts of the world. He pointed out that in other places the distance which minerals had to be carried was measured by thousands of miles, while the raw material used in their district lay within a radius of 20 or 25 miles. Having regard to the facilities for raising the materials in the Middlesbrough District, he thought they could compete with any other part of the world. Referring to the fact that they had been offered fine ores from Norway at a price far less than they could work their own ore, he said he was little inclined to think those people were able to render such assistance; but if it were so, they would be able to avail themselves of it. But in their own district and with the natural facilities they would be able to meet the world at large, given anything approaching fair play. After referring to the quality of the ores, Sir Lowthian asked how were they going to bring impure local ore into successful competition with the rest of the world, and went on to point out that at their Clarence Works they had succeeded in purifying ores very rich in phosphorus, and they had the satisfaction of knowing that there was no hesitation on the part of Lloyd's to grant the certificate required for the steel made at their works, and no objection on the part of the Board of Trade to the use of the steel, for one of the main objects it could be put, the construction of sea-going vessels.

A CURIOUS COPPER DEPOSIT IN CHILE.*

By J. A. W. Murdoch.

The deposit which is the subject of this note occurs in the District of Chuquicamata, situated in the Desert of Atacama, Chile, at over 7,400 ft. above sea-level; it is 12 miles by cart-road from the Oasis of Calama, which is connected by rail with the seaport of Antofagasta, from which it is distant 140 miles. The occurrence affords an interesting example of a very low-grade ore being worked at a handsome profit by persons without capital, in a district where supplies and labor are

IBERIA CLAIM, CHUQUICAMATA, CHILE.



JARDINERA CLAIM, CHUQUICAMATA, CHILE.

comparatively dear, and which is absolutely sterile and waterless, drinking water having to be brought in barrels from Calama.

The ore is found in a range of small hills, and is worked at present over an area of at least a mile long by 900 ft. average width, the greater length lying north and south. It consists of a much decomposed and altered mass of granitic rock, which has been disintegrated into irregular rhomboidal fragments, giving it a sort of shaly appearance; each joint and crevice between the rock-fragments having been filled with copper ore, principally atacamite—oxychloride of copper—forming a stockwork, the structure of which may be seen in the photographs exhibited. The average grade of the whole deposit is probably rather over 2 per cent. copper.

As the rock breaks easily along the atacamite joints, a workman can knock down over 1 cu. yd. daily, working with hammer and gad, or even with hammer only, the latter method being preferred. During the quarrying, the soft atacamite falls to powder, and is saved by sifting through hand riddles; the coarse rock-fragments remaining on the riddles are thrown over the dump. The fine stuff, which contains about 15 per cent. copper, is sacked and sold to smelters or exporters in Antofagasta. Of course, by this method of working there is a very large loss of copper, as the harder plates of atacamite often remain sticking to the rock-fragments, and are thrown over the dump with them. There are other minor causes of loss which it is unnecessary to touch upon.

The depth to which the deposit may be worked is unknown; but in a neighboring vein mine, at a depth of over 300 ft., the walls of the vein appear to be of similar rock, containing similar joints filled with atacamite. The rock, however, is harder, and the atacamite joints are thinner and farther apart than at surface. An external and an internal view are given in Figs. 1 and 2. The workings are quite superficial, the deepest being (September, 1900), nearly 50 ft. from surface. They are in the form of irregular caves, the surface soil, which is hard, being left as a roof, supported by occasional pillars. The men all work on tribute, giving 10 to 20 per cent. of what they extract to the owners of the claims, to whom they are also obliged to sell the balance of their product at a low tariff. The average output per man per day is about 220 lbs. of fines containing 15 per cent. copper. The average day's wage is supposed to be about $4 Chilean currency (say $1.25 to $1.50 gold), but when the tributers strike a favorable piece of ground they often make very much more. The deposit has been known for a long time, having been worked originally by the Indians, whose stone implements are often found in the old workings; but it is only within the last two years that its real value has been appreciated.

The proper treatment for this ore would appear to be lixiviation with weak sulphuric acid, in which the atacamite is readily soluble, while the other constituents of the rock do not seem to be affected. It is said that a syndicate has acquired practically the whole deposit, and is now engaged in the construction of a branch railroad from Calama, with a view to working it on a large scale and in an economical manner; and it is probable that the ore will in future be treated by the wet method indicated above.

It may be interesting to note that a few months ago the body of an Indian was found in one of the workings. He had been killed by a fall from the roof, while engaged in collecting atacamite in a small basket, which was still in his hand, his stone implements being found alongside. The body is in a perfect state of preservation, evidently due to impregnation of the tissues by copper salts, as well as to the antiseptic action of the exceedingly dry climate. As these mines were apparently quite unknown to the early Spanish colonists, it is to be inferred that the body is of considerable antiquity; this is corroborated by the style of dress (a waistcloth and two anklets) and by the stone tools used. The local belief is that it dates from before the time of the Spanish occupation, say, 1600 A. D. I see no reason to consider this improbable. The body, as found, is shown in Fig. 3.

COPPER IMPREGNATED CORPSE OF INDIAN MINER, CHUQUICAMATA, CHILE.

A curious feature of the district is the existence of old gold washings adjoining the copper formation on the north. The Indians have ap-

*Paper read before the Institution of Mining and Metallurgy in London, April 17th, 1901.

parently worked on a thin stratum of auriferous gravel, which has been scooped out and washed in bateas. The remains of the pools in which the washing was carried on are so distinctive as to admit of no doubt about the system employed. The curious point is that the nearest water supply, adequate for such a purpose, is at least 12 miles distant and more than 2,000 ft. below the level of the gravel. The inference appears to be, either that the Indians carried the necessary water by hand or on the backs of llamas, or that the climate of this part of South America has become rainless only within the human epoch, as suggested by Darwin.

ELECTRIC POWER TRANSMISSION IN UTAH.

There are now in Utah, according to the "Electrical World and Engineer," several important high-tension transmission lines. All of the plants obtain water power from the mountain streams of the Wasatch Range. The Telluride Power Transmission Company has 105 miles of system of 40,000-volt three-phase circuit and occupies the southern portion of the Utah Basin. Its transmission line completely encircles Utah Lake. The principal part of its business is supplying power to the mines at Mercur and Eureka, and it also lights all the villages along the line. Next, north of this, is the Utah County Power Company, which is a small concern supplying light to Lehi and American Fork. The Jordan Narrows plant has lines to Bingham and Mercur. Centering in Salt Lake is the large system controlled by the Utah Light and Power Company, which has two plants in the Big Cottonwood Canyon feeding into Salt Lake City over two different 10,000-volt lines, and supplying power service at points south of the city. Feeding into Salt Lake City from the north is the 16,000-volt line from the Ogden power house, which power house also supplies Ogden. The Ogden plant and the Big Cottonwood plant are operated in synchronism through the 2,300-volt secondary circuits at Salt Lake City.

ANTHRACITE COAL PRODUCTION IN 1900.

We have heretofore given the statement of anthracite coal shipments for the year 1900. The fuller statistics of production are now available, as prepared from the district inspectors' reports by Mr. James E. Roderick, Chief of the Bureau of Mines of Pennsylvania.

The shipments reported by the inspectors differ somewhat from those given by the anthracite coal companies. In the table below the lines showing rail shipments gives the totals as stated by the companies, the difference between those and the inspectors' totals being given in the line of other shipments. The figures are in long tons:

	—1899.—		—1900.—		Changes.
	Tons.	Per ct.	Tons.	Per ct.	Tons.
Shipments by rail	47,665,203	88.2	45,107,484	88.0	D. 2,557,719
Other shipments	285,698	0.5	164,124	0.3	D. 121,574
Sold to employees and local trade	1,111,413	2.1	1,064,777	2.1	D. 46,636
Total sales	49,062,314	90.8	46,336,385	90.4	D. 2,725,929
Used at collieries	4,971,910	9.2	4,880,933	9.6	D. 90,977
Total mined	54,034,224	100.0	51,217,318	100.0	D. 2,816,906

The decrease in shipments was 5.4 per cent., in the total mined 5.2 per cent. The proportion of coal used at mines increased somewhat, as might be expected where there was a considerable period of idleness during which pumps and some other machinery must be kept in operation. The decrease was not all due to the long strike in September and October by any means. The comparatively mild winter of 1899-1900 was an important factor in lowering consumption.

The strike lasted from the middle of September to the end of October, covering 38 working days, and was general all through the anthracite region, except in the comparatively small section included in the Panther Creek basin. The actual decrease in average working time as reported was only 9 days. The strike was expected for some time before it actually began, and for nearly 2 months the mines were run on full time and stocks of coal accumulated; while after its close the mines ran on full time to make up the shortage. The fact that in 1899, when the shipments were very large, the average working time was only 180 days, shows very plainly the labor conditions in the anthracite country, to which we have often referred. In the best year which the trade had known for eight years the average miner made only a little more than half time. The number of men employed and the number of accidents are given in the following table:

	1899.	1900.	Changes.
Total number of persons employed	140,583	143,826	I. 3,243
Average number of days worked	180	171	D. 9
Total number of days worked	25,304,940	24,594,246	D. 710,694
Number of persons killed	461	411	D. 50
Number of persons injured	1,030	1,057	I. 27
Total number of casualties	1,491	1,468	D. 23
Persons killed per 1,000 employed	3.28	2.86	D. 0.42
Persons injured per 1,000 employed	7.33	7.35	I. 0.02
Total casualties per 1,000 employed	10.61	10.21	D. 0.40
Persons killed per 1,000 days' work	0.018	0.017	D. 0.001
Persons injured per 1,000 days' work	0.041	0.043	I. 0.002
Total casualties per 1,000 days' work	0.059	0.060	I. 0.002

We have given above the averages based upon day's work. The number of day's work, however, is approximate at the best, and it is probable that for 1900 at least the total is too high. Especially in the earlier days of the strike collieries were reported at work when only a part of the usual force was present. The average as calculated in the table must therefore be accepted with some reservations. Taking them as they stand, it would appear that last year there was one casualty to 16,685 days' work. The average coal mined per employee in 1900 was 356 tons, and per employee per day 2.08 tons; these figures comparing with 384 tons and 2.13 tons in 1899. The total coal mined per day worked last year was 299,516 tons, which compares with 300,190 tons in 1899.

The total number of boilers reported as in use in 1900 is 5,577, their total rating aggregating 349,458 horse-power. There seems to be some discrepancy in the returns, for in 1899 the total number of boilers was 6,343, the total rated horse-power being 350,007. There may be—and probably is—a tendency to replace small boilers by larger ones, but a reduction of 766 boilers in one year seems too large. It is more probable that there has been some revision of the returns, probably involving the dropping of old and disused boilers. Of the boilers in use last year there were 3,834 classed as "cylindrical" and 1,743 as "tubular."

The number of electric dynamos in use in 1900 is reported as 60, an increase of 15 over the previous year. The number of air compressors was 139, an increase of 21. There were 3,826 steam engines reported, the rating aggregating 322,246 horse-power; this is an increase of 72 engines and 34,146 horse-power over 1899.

The total number of pumps delivering water to the surface reported last year was 917; their rated capacity was 646,025 gals. per minute, and the average work done was 366,401 gals. per minute. Apparently there have been some changes here, for while the reports show a decrease of 62 in the number of pumps as compared with 1899, there was an increase of 14,395 gals. per minute in rated capacity, and of 16,871 gals. per minute in the average work done.

In haulage in and about the mines there were employed last year 15,708 horses and mules and 433 locomotives; 365 of the latter being driven by steam, 30 by compressed air and 38 by electricity. As compared with 1899 there was an increase of 18 mules only, while the addition to the number of locomotives was 13 steam, 6 air and 9 electric, or 28 in all. In fact, the number of mine mules has been practically stationary for several years, the increase in haulage power being entirely in the mechanical types. Steam haulage evidently continues in favor in the anthracite country. The number of compressed air and electric motors in use, though increasing, is still small in comparison with that of steam locomotives.

The quantity of black powder used last year was 1,237,180 kegs. The dynamite used, chiefly in rock and deadwork, was 3,454,641 lbs. The powder used in 1899 was 1,372,691 kegs, so that last year showed a decrease of 135,511 kegs. This was proportionally greater than the decrease in production; the average coal mined per keg of powder having been 41.4 tons in 1900 and 39.4 tons in 1899. Owing to variations in thickness of seams, and in other local conditions, there is naturally a considerable variation in the powder used in different portions of the anthracite field. Thus, the average quantities of coal mined per keg of powder used in the different inspection districts last year was as follows: First District, 31.2 tons; Second, 31.3; Third, 34.4; Fourth, 40.6; Fifth, 59.4; Sixth, 49.6; Seventh, 48.0; Eighth District, 70.8 tons.

LEAD POISONING IN GREAT BRITAIN.—The report on lead poisoning in certain trades in Great Britain shows that in the year 1900 there were 1,058 cases reported, of which 200 were in the pottery trade and 858 in other trades. In 1899 the total number was 1,258, so that there was a large decrease in 1900. Of the sufferers last year 884 were males and 174 females.

PRODUCTION OF STEEL BY ELECTRICITY IN SWEDEN.—United States Consul Nelson, of Bergen, under date of January 30th, 1901, reports a successful attempt to produce steel by electricity in Sweden. The consul says: "The experiments are being carried on at Gysinge, Sweden, and about 25,000 lbs. of steel are produced in six heats daily. The steel is of an excellent quality and meets with ready sales at high prices. On account of the relatively cheap methods of production, the profits are large, but as the electrical power is limited, the output is insignificant. To overcome this drawback, plans have been formed for the erection of a large electric plant near the Dalalfuen River, the water power of which will be utilized. This will enable the company to carry on the manufacture of steel by electricity on a large scale.

MINERAL TRAFFIC ON BRITISH RAILROADS.—The recent rapid and considerable development of the mineral industries of the United Kingdom has called for special efforts on the part of railway companies and all who are engaged in, or connected with, the business of transport, in order to meet it, says the London "Iron and Coal Trades Review." No one can yet tell what may have been the quantity of minerals moved on British railways in 1900, but it is quite certain to be materially larger in that year than it was in 1899 and may possible exceed 300,000,000 of tons. Of this enormous tonnage the largest quantity is carried by the North-Eastern Railway in the Yorkshire, Durham and Northumberland coal-fields, this company having in 1899 transported 39,715,285 tons, against 34,662,194 tons carried by the London & North-Western and 28,345,054 tons carried by the Great Western Railway. Only nine English companies carry more than 10,000,000 tons a year, four carry between 5,000,000 and 10,000,000 tons, 10 carry between 2,000,000 and 5,000,000 and all the other companies carry less than 2,000,000 tons each.

HEATING A LARGE ENGINE HOUSE.—In a recent publication the B. F. Sturtevant Company, of Boston, Mass., described its method of heating and ventilating the largest roundhouse in the world; that of the Chicago & Northwestern Railway at Clinton, Iowa. Regarding a similar arrangement in the roundhouse of the same road at Mason City, Iowa, the master mechanic writes that "the engine house at Mason City is heated the same as the one at Clinton, and we are very much pleased with the arrangement. While this has been a very open winter, still on two or three occasions the thermometer has registered 12° below and at no time have we found it necessary to run the engine at its full capacity. Engines coming from the road, covered with ice and snow, are quickly thawed and inside of one hour are ready for service. As a rule, in this country, during the winter season where engine houses are heated with steam it is impossible to see 10 ft. ahead of you. At no time during the winter have we noticed anything of this nature. The plant at Mason City has been visited by quite a few railroad officials of other roads, and all are very much pleased with the arrangement."

THE PROVINCE OF PYRITIC SMELTING.

Written for the Engineering and Mining Journal by Herbert Lang.

I have read with interest the editorial comments of the "Engineering and Mining Journal" of March 2d, upon the smelting installation of the Bingham Mining Company, wherein the ground is taken that the pyritic process is not of general application—a matter that I had thought was settled otherwise by the work and experience of the last 10 years. I have been under the impression that the pyritic furnace could do almost anything that the ordinary matting blast furnace could, and could do it better and cheaper. Better, because making a purer product; and cheaper, because using less fuel, and making a more concentrated product upon which the refining charges were less. In this belief I am followed by many who have practiced this form of smelting where it has attained its best development.

Doubtless the "Journal" has cogent reasons for coming to a different conclusion, but it will, I hope, give me the opportunity of enlarging somewhat upon the conclusion to which those have come who have had actual experience with the process. In this connection I would like to discuss with some fulness the various points that are brought up in the editorial referred to.

First, as to the matter of making a high-grade product out of low-grade sulphides; the pyritic process cannot make a 50 per cent. matte out of 1 per cent. ore, but it can and does regularly make 20 per cent. matte out of 3 per cent. ore, which is better than any other method can do. The question is not whether a process can attain some difficult or impossible ideal, but whether it can do as well or better than any other process on given ores. A great many injudicious claims have undoubtedly been made for the pyritic process, as for others, and it has been rather the fashion for those who meditate erecting smelting works to insist upon the performance of some difficult, or in the present state of the art unattainable, rate of smelting or degree of concentration, rather than to demand reasonable advantages over other processes that suggest themselves.

It is not a little curious that the extensive adoption of the converter as a means of bringing forward copper matte to the metallic condition should have operated to retard in considerable measure the introduction of pyritic smelting, especially in its application to heavy cupriferous sulphides. This was because it was early ascertained that the fusion of such ores, which commonly contain a very large proportion of iron, sulphur and other oxidizable constituents which cannot be removed to a sufficient extent by the pyritic agencies, does not give a matte at the first smelting of sufficiently high a tenor to admit of profitable bessemerizing at once. It then becomes a question of roasting the raw ore and then fusing it, thereby getting a rich enough matte, or of first smelting the raw ore pyritically and afterward either re-smelting the first matte along with silicious ores, or of roasting the first matte and then re-smelting it. At the final operation the matte is found enriched and fused, and the bessemerizing can be at once applied. At the Mount Lyell works in Tasmania they deal with heavy pyrites, which are smelted pyritically, along with silicious flux. The pyrites carry but about 3 per cent. of copper, but are concentrated to such an extent in this single fusion that the matte contains over 20 per cent. copper, which corresponds to a concentration of nearly 6 tons into 1. The company's report for the half year ending September, 1899, discloses that the average assay of their pyrites at that time was 3.38 per cent.; and that of the matte 21.12 per cent.; so that the ratio of pyrites to matte was about 5½ to 1. Their practice is to flux with barren silica and with limestone. As converting is a part of the work in Tasmania, the matte is next re-fused with silica in the pyritic manner, raising its tenor to about 50 per cent., which answers best for the converting process. The second fusion thus puts 2½ tons into 1, which corresponds well with the achievements of our American pyritic smelters, as I shall have occasion to note further on.

It is undeniable that shipping a low-grade matte to market deprives the smelter of the use of a considerable amount of iron which would be of service in the fluxing of silicious ores, but the conditions under which this combined iron would become useful are not the same with the pyritic as with the ordinary method. In either case there must be an excess of silicious fluxing ores—not merely barren silica—whose reduction is of moment to the general plan. I do not by any means advocate shipping a low-grade product, for the very apparatus which is necessary to produce low-grade matte can by another operation or two on much diminished quantities produce a much enriched matte or metal; but I do not like to overestimate the fluxing power of the iron thus set free. It amounts, on the ton of 20 per cent. matte raised to 50 per cent., to 500 lbs. nearly, of metallic iron, which when converted into the form of ferrous oxide will take up about 275 lbs. of quartz, bringing it to the singulo-silicate degree, when the smelting is done in the pyritic furnace. If we use the "ordinary" method, common practice dictates the formation of a more basic slag, kept low in silica purposely, so as to retain a certain fluxing power when added to the ore charge. In this case the preliminary roasting of the 20 per cent. matte would set free practically the same amount of iron, whose saturating power as to silica would be the same in the final result. Here are two practical considerations which, though having no important bearing on the choice of processes, still are worth stating. It is a fact that the "ordinary" slag derived from smelting roasted matte may be made lower in silica than probably any pyritic slag whatever, and would therefore be preferred as an addition to the ore charge, where the virtues of a heavy irony sub-silicate slag as basic flux are much appreciated. In this case the slag is not only a welcome addition to hard-smelting mixtures, but by reason of its basicity it invariably contains valuable metals only to be recovered by re-smelting. On the other hand, pyritic work results in making slags of a more acid character—in fact, so far as I know, we cannot make a sub-silicate in that furnace—slags which have less value as flux, but which carry off far less valuable metal than the above basic ones. There is consequently less reason or none at all for re-smelting them, even when they arise from the re-treating of mattes high in copper. These considerations are of course too obscure for the ordinary reader to take much note of, but they should have their weight with engineers when the selection of a process is under advisement. It appears from the foregoing that when the operations are carried equally far, the fluxing properties of the iron are utilized in many cases more fully in the pyritic than in the other model, while were the iron to be driven into very acid slags, I think that the advantage would be with the "ordinary," inasmuch as the way has not been shown to the making of such slags in the pyritic stack. It has been observed by pyritic smelter men that that furnace "chooses its own slag," as Dr. Carpenter cleverly expresses it. The metallurgist finds himself compelled to respect the choice, and when he conforms to it the most nearly he finds it doing its best work. Silica, which is the ruling substance in smelting, can be compelled to ally itself with various proportions of iron oxide, for example, under varying conditions; but under the conditions ordinarily prevailing in the pyritic furnace silica takes up just enough ferrous oxide to form the singulo-silicate. I say ordinarily, for it may be that with a higher or hotter blast a more acid compound would be formed. This tendency is obscured by the presence of some other substances, particularly of alumina, which is even more difficult to understand than to smelt. With lime the tendency is to form the bisilicate, and as this is a stronger base than iron, it happens that the amount of decomposition of the sulphides brought about in the pyritic stack depends directly upon the excess of silica above that necessary to make a bisilicate with the lime present. The remaining silica (assuming the absence of other bases) retards the smelting of the charge until by the combined action of the oxygen blown in and the excess of silica, enough pyrites are decomposed to furnish the iron to saturate the excess of silica. I ask the reader's particular attention to these statements because they embrace fundamental facts about the process which have not hitherto been published. The improvements which have been introduced under the name of pyritic smelting come under two heads, namely, the use of the heated blast, which we owe to Mr. Austin, and those other agencies, which I may summarize as the influence of the acidity of the charge. The latter principle was discovered independently by several workers, including the writer, who will have more to say upon this subject at a later date. As a general thing we may say that as the proportion of silica in the charge increases, the matte-fall diminishes; or, in other words, the concentration increases with the silica. At the same time, and in the same proportion perhaps, the rate of smelting diminishes. Given a charge very rich in pyrites, while the silica remains quite low there will be but slight formation of ferrous oxide, and consequently small concentration; but the furnace will run tumultuously, putting through an immense quantity of ore. Whether this style of work, where so great a quantity of matte is formed of necessarily low grade, will pay, is a question to be decided on the spot and not to be dogmatized about at a distance. It is understood that at Tilt Cove, Newfoundland, the practice is, or was, to put but two or three tons into one, which they were enabled to do wholly without artificial fuel—the oxidation of a very small part of the sulphides, and, as we may suspect, the burning of a part of the volatilized sulphur in the interstices of the charge, together with some heat derived from the formation of silicates, sufficing to fuse the charge. Had they sought a higher concentration it could have been had by adding silica; but this, if done to much extent, would have necessitated the addition also of coke. While but a little slag is formed, with a good deal of matte, the heat requirements are not rigid. Almost anything suffices to melt the charge; but the formation and thorough fusion of large quantities of slag, on account, no doubt, of its higher specific and latent heat, require a great deal of caloric. It might be supposed by those who are not familiar with the actual running of pyritic furnaces that the extensive decomposition of sulphides brought about by the presence of large amounts of silica and the attendant liberation of heat through the formation of silicates, would result in the production of heat to keep pace with the increased requirements; and this is a rational supposition. But in practice, from causes not yet fully understood, it does not seem to be the case, and we are obliged to add more and more coke to supply the deficiency. As it stands at present it seems impossible to smelt without fuel, except when getting a very low rate of concentration, say of 2 or 3 into 1; while higher rates of concentration require the addition of coke. This statement I give as my own impression, gathered from what others have reported. I have never been so situated as to be able to experiment on smelting entirely without fuel, which is an ideal pursuit, and so far as I am aware, only carried on at the one locality mentioned.

In consequence of the discovery of the influence of silica on the decomposition of the sulphides, it becomes possible to smelt pyritically with the cold blast, and several plants hitherto run with the hot blast dropped it and took to the use of cold air and an increased percentage of coke. About the economy of this proceeding it is difficult to speak in general terms, the conditicns varying so widely in different localities; but apart from the increased difficulty of running the hot air plant, I should say that under most conditions the hot air installation would prove considerably more economical. No doubt it has been discarded sometimes to simplify the plant, additional reasons being the imperfection and cost of maintenance of hot blast stoves in general. Considerations of the cost of fuel come in also, there being evidently far less incentive to keep up and run a stove where coke is cheap than where it is dear. The cold blast furnaces working on this plan use from 10 to 20 per cent. of coke, according to its quality, the character of the ore mixture, or the degree of concentration sought. It is impossible to say what the average amount is, statistics of this sort being hard to get, and there being furthermore a strong disinclination on the part of furnace conductors to tell the truth about their coke consumption. For this and for other reasons it is not possible to compare the hot with the cold blast methods in general, though we may do so in specific instances. It is well known that charges have been smelted in the pyritic hot-blast furnace entirely without fuel, and that continuous and successful work has been done with as little as 2 per cent. when the charges were fusible. Three per cent. is frequently used, with excellent results. I suppose that if the actual amount of coke

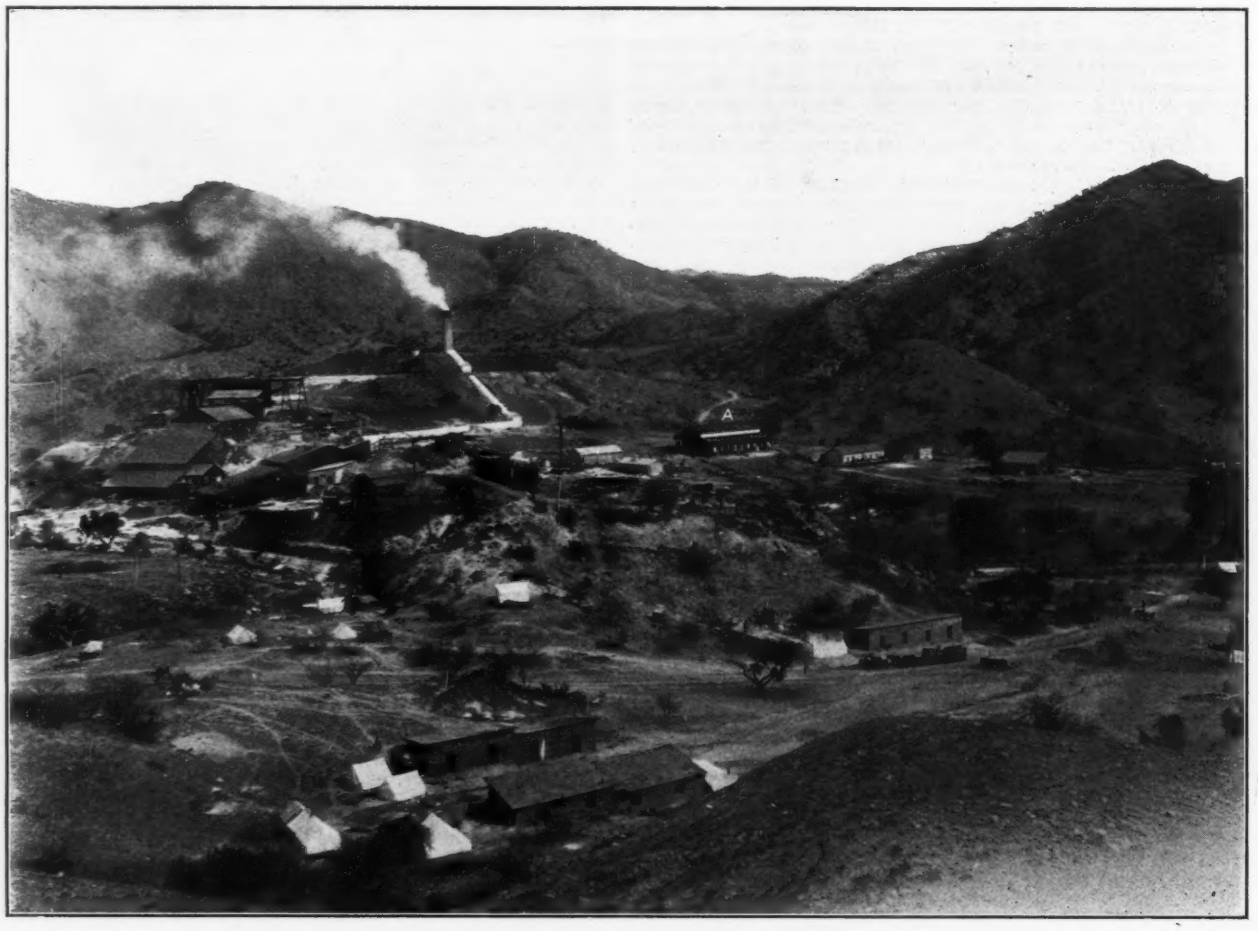
used in prolonged campaigns were compared with the amount of material charged, the result thus giving the true showing of the coke consumption, it would be somewhat higher than what is usually claimed. But in any event the saving by the use of the hot over the cold blast must be two-thirds of the coke, I should think. Under the conditions prevailing in the mining districts it costs from 20 to 40c. per ton of charge to heat the blast, from which we may approach somewhat near to the actual saving by that means.

A full realization of the important consequences of the influence of the acidity of the charge makes pyritic smelting seem a very different thing, not only from the ordinary method of blast furnace smelting, but from pyritic smelting as we first knew it. The practice and experiments of the last few years have let a flood of much-needed light upon the subject and placed it in rank with the best understood and most scientific of all the metallurgical process. Still there are problems of the greatest interest and of the most recondite character which remain to be solved before we shall attain to a complete understanding of the multifarious reactions which govern the work, and it is this feature which will continue to render pyritic smelting a pursuit of the most absorbing interest to the scientifically inclined.

Pyritic smelting reduced to its simplest terms is nothing, we may say, but ordinary matte-smelting plus a power of burning off some extra portions of a charge, and thereby getting a more concentrated and therefore more valuable product. I cannot think that there is a single matting blast furnace of the older type running in this or any other country whose work would not be improved by an infusion of pyritic methods. Differently stated, I believe that the work of every ordinary furnace—with exceptions which I shall note—could be done better by pyritic ones. I would except such furnaces as run on charges deficient in either silica or combustible sulphides. A deficiency in sulphides throws the work at once into the domain of ordinary smelting, while a shortness of silica prevents, for the reasons previously given, a competent concentration. I would also except those charges, very high in silica, which require an extremely acid slag; for such slags have not as yet been produced in this form of smelting. Such slags are oftentimes handled by means of the hot blast; but this does not necessarily imply pyritic smelting, although for a time such blast was deemed an essential to that process.

It has been asked thousands of times, and doubtless will be asked more times in the future: What is the difference between pyritic smelting and ordinary blast furnace smelting? Or, where does ordinary smelting leave off and pyritic begin? If I were to answer such a question, I should say that the essential difference between the two consists in that the pyritic furnace forms oxides from sulphides, in particular the oxide of iron from pyrite within the furnace, while the other does not. It is not the heat resulting from this effective breaking up of the sulphides which characterizes the process, although this is very welcome and useful, for this may be had in other ways. Any means whatever of decomposing the sulphides inside the stack will be a part of pyritic smelting, even though applicable in a measure to systems running on the old plan. So near do the two processes approach, in fact, that the mere change of the charge of an ordinary furnace may convert it into a pyritic one. This being the case, metallurgists do well to crowd on all the silica the furnace will take, with a view of running the slag as highly as possible, while the matte, deprived of a part of its iron, becomes enriched in copper proportionally. Thus close together have these processes been brought by the discoveries and practice of later years. Since, as I have endeavored to show, the addition of a little silica to the charge converts ordinary matting under common conditions into pyritic smelting, we have in this fact alone sufficient refutation of the notion that the latter process is not a general one, and applicable to almost all the conditions wherein the ordinary method is, or can be, used, besides many where the ordinary is not applicable. On their merits I regard the pyritic method as being more generally useful than the other, thereby disagreeing vitally with the dictum that the new method is likely to be useful "only under exceptional circumstances." The influence of the acidity of the charges is a principle which is certainly destined to make its way into almost universal practice, and this, as I have said, is one of the main springs of the pyritic process, inasmuch as by its aid cold blast pyritic workers are enabled to effect a desirable concentration of their product. Hence we have, irrespective of the advantages and disadvantages of the hot blast, a means of concentrating the matte which belongs exclusively to the pyritic process; while, as I remarked, it can be applied to the ordinary method without any alterations of the furnace or accessory apparatus. In so far as the oxidizing power of the installation is thereby increased the work partakes of the pyritic character; which being the case I cannot perceive any hampering conditions which prevent the method from being considered a general one.

(To be Concluded.)



Gas Plant. A. Power House.

NACOSARI MINES, MEXICO.

A NEW OIL TANK STEAMER.—Indian papers state that the new steamship "Khodonng," the third vessel built for the Burma Oil Company to carry oil in bulk, arrived in Rangoon on January 15th. She was built by Armstrong, Whitworth & Company, in England. Her indicated horse-power is 1,200 and she steams 11½ knots. She has 8 oil tanks capable of carrying 2,200 tons of oil and discharging 500 tons per hour. She is built of steel and specially designed to consume liquid fuel.

RUBY AND JADE MINES IN BURMA.—The value of the output of the ruby mines rose in the last official year from 869,252 to 1,362,722 rupees consequent on the introduction of electric-pumping machinery, says "Indian Engineering." The lease of the jade farm was resigned, as the disturbances in China have closed the market for jade at Canton. There were two years for the lease unexpired. The Chinese lessee evidently has no great faith in the European concert bringing about a speedy restoration of normal trade in China.

A GAS POWER PLANT WITH ELECTRICAL DISTRIBUTION.

One of the most interesting features in the development of the Great Pilares Copper Mine, at Nacosari, in Sonora, Mexico, is the successful use of a gas power plant with electrical distribution, using for fuel wood or local bituminous coal. The mine is operated by the Moctezuma Copper Company, controlled by Phelps, Dodge & Company, of New York. Dr. James Douglas, president, Prof. A. H. Ricketts, geologist and metallurgist, and Mr. John Langton, mechanical and electrical engineer, selected the type of plant to be used, and Mr. Langton had charge of the installation and operation of the gas plant, the gas engines and electrical apparatus. A notable point in this plant is that all the power is generated at a central station.

The gas plant, furnished by the Loomis-Pettibone Company, New York, consists of two sets of Loomis generators, each set having two 9 by 15 ft. generators, with waste-heat boiler, scrubber, exhauster, valves, etc. The generators are cylindrical, constructed of steel, 9 ft. in diameter and 15 ft. high. The lining is of firebrick, with arched grates, ash-pit and flue to boiler in the bottom. The vertical boiler is of the multitubular type. All of the gas generated passes through this boiler, thus utilizing the sensible heat in the gas for steam making. The steam from this boiler is passed through the fires for decomposition. The exhauster is of the Roots type, and by altering its speed, the rate of gas making can be changed to meet varying demands for power. Each set of generators will produce gas enough to supply 1,000 brake horse-power of gas engines, one being in continuous service, with the other set in reserve, thus ensuring continuous operation.

Two qualities of gas are made alternately, as the fires are supplied with steam or air, so two gas holders are in use, one having a capacity of 5,000 cu. ft., for water gas, and the other a capacity of 15,000 cu. ft., for producer gas. The two gases are mixed in fixed proportion, giving a uniform gas, which is essential in operating gas engines.

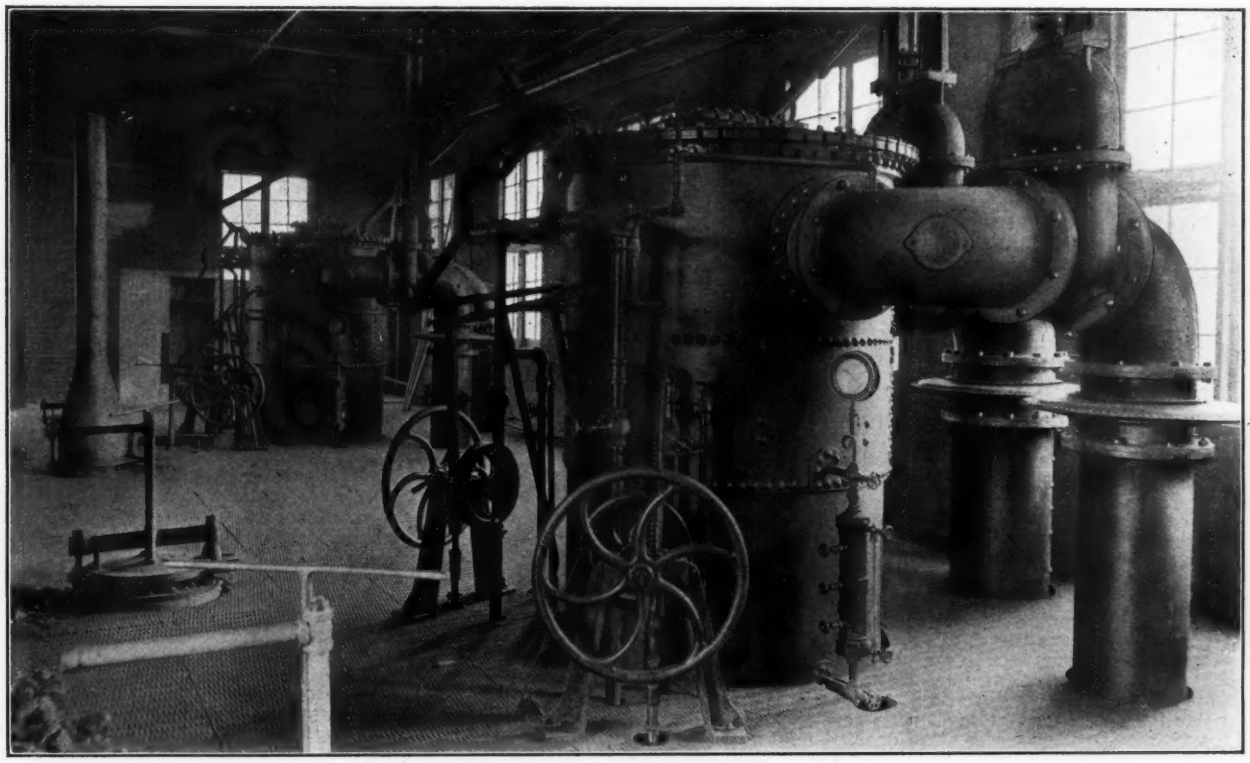
With the Loomis system the fuel is charged through an open door in the top of the generator and the gas is exhausted from the bottom of the fire, thus converting all tarry and volatile matter in bituminous coal and wood into a fixed gas, which is then drawn through an ordinary water spray scrubber by the exhauster and delivered to the holder. Coal is shoveled into the top doors as needed. Wood is thrown in in lengths of 2 or 3 ft. and ordinary cordwood diameters. The fires are cleaned but twice a week. The water for the scrubber is cooled by a simple tower and used over and over.

Electric motors are used to drive the several departments of the reduction plant. The power house is a steel structure 108 by 62 ft. The steel framework supports a 12-ton traveling crane with a span of 25 ft., available in any part of the building. The dynamos are operated by eight Crossley gas engines made in Manchester, England, rated at 110 horse-power at 200 revolutions per minute. Each engine with fly-wheel weighs 40,000 lbs. They are the four-cycle, hit-and-miss type. Additional engines rated at 400 horse-power more are to be installed. Eight tanks contain water for the circulating system for cooling cylinders. Each engine is belted direct to a 65-Kw. 260-volt shunt-wound direct-current General Electric generator with a normal speed of 910 revolutions per minute. The reason shunt-wound instead of compound-wound machines were selected is to insure protection against any lapses of the engines. If any of these should drop its speed below normal, the affected dynamo for the time being would become a motor and would not, therefore, interfere with the action of other motors. The current from the eight generators is carried to a switchboard by overhead cables. This switchboard consists of eight generator panels, one main station panel and one feeder panel. The current is transmitted to the departments over four circuits of Standard conductor, each having an area of 500,000 circular mils. Two of the circuits are taken to two distributing boards in the concentrator, one for each mill, giving a total of 500 horse-power with an overload capacity of 25 per cent. Another is taken to the furnace and converter blower room for other machinery and lighting. Any dynamo may be cut off from the switchboard from three different points in the power house—at the switchboard (at quick-break switch), at either dynamo, and at either engine by a push button that operates as a solenoid on the circuit breaker. The lighting equipment at the beginning for the mill and the town consists of 400 C. P. 250-volt incandescent lamps and 10 arc lamps, constant potential. A telephone service will connect all departments.

Where fuel is high and water supply is limited or unfit for boiler use, the saving with gas power plants is very large, the principal economy being in fuel. A plant like the above consumes from 1 lb. to 1½ lbs. per brake horse-power hour of bituminous or anthracite coal, varying with the quality of coal. The consumption at Nacosari, using bituminous coal from New Mexico, is less than 1½ lbs. per brake horse-power, and using wood, about 3 lbs. wood for the same unit. This is less than one-half the fuel consumption in the best large steam plants on similar work and one-quarter the fuel consumption of the ordinary plant. Where low grade ores are worked and much power is required, the power question becomes an important factor.

The advisability of using electrical distribution depends upon local conditions. In some cases it certainly gives most excellent results, and where many changes are to be made in the processes, and power required in different parts of the work varies from time to time requirements are easily and quickly met. In places where power is requ'red at inaccessible places, the central plant can be placed near the wood or coal supply and the power distributed electrically at less cost than transportation of fuel.

We hope later to describe a gas power plant where the gas engines are located at different points about the works where the power is required and the gas is piped considerable distances to the engines. In some locations this plan may present advantages over electrical transmission.



OPERATING FLOOR, LOOMIS GAS PLANT.

THE CONSUMPTION OF BASIC SLAG.—Of the various materials known as chemical fertilizers or artificial manures none has advanced so apidly in farmers' favor in recent years as basic slag, or Thomas phosphate, as it is termed on the Continent. In 1880 the production of this slag in the Grand Duchy of Luxemburg and in Germany was only 4,326 tons, in 1890 it was 358,320 tons, and in 1899 it had risen to 953,570 tons. The production of basic slag in Europe now exceeds 1,700,000 tons annually. The latest year for which full statistics of the production and consumption of basic slag were available is 1899, for which period M. Grandeau has brought the details together in the "Journal d'Agriculture Pratique." The countries of largest annual consumption are Germany, 895,500 tons; France, 170,000 tons; Great Britain, 128,000 tons; Austria-Hungary, 92,000 tons; Belgium, 89,000 tons; Sweden, 58,000 tons; and Italy, 56,500 tons. The countries of greatest annual production as measured by the output of 1899, are Germany, 1,009,000 tons; Great Britain, 267,000 tons; France, 166,000 tons; Belgium, 131,000 tons; and Austria-Hungary, 63,000 tons. Great Britain is the only country in Europe in which the production largely exceeds the consumption, more than half the total output in 1899 having been exported to different countries, headed by Germany, which took 34,000 tons, and France, which took 30,000 tons. In Germany about half the phosphoric acid used in fertilizing is obtained from basic slag.

ABSTRACTS OF OFFICIAL REPORTS.

Aetna Consolidated Quicksilver Mining Company, California.

The report of this company for the year ending December 31st, 1900, shows receipts as follows: Sales of quicksilver, $88,509; interest, $1,731; total, $90,240. Charges were: Working expenses, $54,814; decrease in supplies, $4,425; depreciation on buildings, $11,266; construction and repairs, $1,195; total, $71,700. This left a balance of $18,540, from which dividends amounting to $15,000, or 3 per cent. on the stock, were paid. The balance of $3,540, added to $75,590 brought forward from previous year, left a total of $79,130 on hand at the close of the year.

The total development work done was 2,052 ft. The total ore smelted was 11,888 tons. The quicksilver produced was 1,945 flasks, or 148,792 lbs., the average yield being 0.62 per cent. The earnings were $7.45, and the expenses $6.03 per ton of ore worked. The result per pound of quicksilver shows receipts of 59.5c. and expenses 48.2c. The production showed a large decrease from 1899, when 18,084 tons of ore were smelted and 290,700 lbs. quicksilver produced.

The report says: "Prospecting and development work has been steadily carried on, but up to date without much encouragement, although we are still drifting and cross-cutting from the Washington shaft, hoping to find the ore bodies cut by the Garden tunnel above. We are also running four tunnels in Red Hill from which we hope for results later on. As the extent of mineral territory here is very large and would require extensive prospecting and a large expenditure of money to prove it up outside of our previous workings, your management deemed it wiser to perhaps do this by leasing and meanwhile secure another property, if possible, which was more immediately available and showed more defined conditions. We have, therefore, finally secured a bond on a property which shows very excellent indications, and are now engaged in opening this, and proving up what it is. So far the results are satisfactory, but we have not yet progressed far enough to warrant its purchase, but with settled weather rapid progress will be made in prospecting."

Hecla Consolidated Mining Company, Montana.

The report of this company for the year 1900 shows that there was taken from the mine 2,357 tons first-class ore and 500 tons second-class ore. A part of this—2,023 tons—was smelted in the company's own smelter and the rest shipped to Omaha for treatment. The total yield in metals was 226.4 oz. gold, 232,820 oz. silver, 131,494 lbs. copper and 1,013,524 lbs. lead. The financial result shows receipts from ore and bullion, $180,401, while the total expenses were $143,930, leaving a net balance of $36,471. From this dividends amounting to $30,000 were paid. The balance of $6,471, added to $32,606 brought forward from previous year, left a cash balance of $39,077 forward to current year.

The Hecla Mine properties have produced a total of 209,623 tons of ore. In the 20 years from 1881 to 1900, inclusive, the total earnings were $10,189,648 and the total expenses $8,123,071. The net amount earned was $2,066,577, and from this the stockholders received $2,027,500 in dividends; leaving a balance of $39,077, as above. The total amount of dividends paid from the organization of the company to the end of 1900 was $2,220,000. The record of the company is one of careful and honest management.

The average earnings in 1900 on the basis of 2,357 tons first-class ore mined were $76.54, and the expenses $61.06. The cost of mining was $33.19 per ton. Including the second-class ore, the cost of mining was $27.39 per ton.

The report of General Manager Henry Knippenberg says: "To me it has been clear, for two years, or more, that unless our mines should yield at least twenty-five tons per day of fair smelting ore (9,125 tons a year) it would not be profitable to operate our reduction plant. A smelter should have good ore, and be pushed to the limit of its capacity, to obtain the most profitable results; and should be in continuous operation, if capable men are to be retained in its service.

"On August 29th, 1900, after a run of 25 days, the furnace at Glendale was closed down, and we began shipping all our ore product to the American Smelting and Refining Company, at Omaha. The shipments from September to December, inclusive, were 24 cars, the net returns were $46,406 and expenses $36,170, showing net profit, four months, $10,236. The average assay value of the ore included in the foregoing summary is as follows: Lead, 22.3 per cent.; copper, 3.3 per cent.; zinc, 13 per cent.; iron 7.5 per cent.; lime, 4.5 per cent.; silver, 122.72 oz. per ton; gold, 0.09 oz. per ton; silica, 14.2 per cent. An increase in the lead, copper, silver, gold, iron or lime contents of the ore; or decrease in the zinc or silica, would have added to the profit.

"From our tailings, at Greenwood, leased to D. T. Haskett & Co., we have received during the year royalty (20 per cent.) amounting to $3,968. As a matter of justice to Mr. Haskett and his associates, it may be said that this is the royalty result of but two months of steady work. The unforeseen difficulties in starting up a new plant which has so much complicated machinery, together with the unseasonable weather, rendered the working season very short. Twenty degrees below zero, in October, made it seem advisable to suspend operations until the opening of spring. The company owning this lease is now erecting additional machinery, at a cost of $20,000, by means of which it is expected to save 85 per cent. of all values contained in our tailings. What the Hecla Consolidated Mining Company may realize out of this lease it is too early to estimate; but it is reasonable to expect a considerable amount.

"The three smelting furnaces which have been in use for the past 20 years I ordered torn down last September; first, because they were practically burned out and, second, because they were entirely out of date. Improvements in smelting methods and machinery have been so great during the past 20 years that, should our mines again reach a producing capacity of 25 tons a day, it would be advisable to erect a new up-to-date furnace, which would cost, probably, $10,000. . . .

"The year 1901 is not without promise; yet it is not safe to predict results from working a mine. All depends upon the ore which may be found; and when found, upon its value. There are before us two propositions; one or the other we must accept: First, press on, and accept the result; second, stop, abandon the property, or lease it. In my opinion we should continue as we have been doing; drive ahead, prospect and develop, if ore is still in the mountain."

Delaware & Hudson Company.

This company owns a large estate in the anthracite region in Pennsylvania. It owns and leases an extensive system of railroads, extending from its mines to the Hudson River at Albany and northward into Vermont as far as Rutland and through New York to the Canada line. The tidewater coal shipped by the company reaches New York harbor over the Erie Railroad. The canal which the company formerly operated was abandoned finally two years ago. The report is for the year 1900.

The statement for the Coal Department for the year 1900 may be presented as follows:

	Total.	Per ton.
Sales of coal	$6,969,066	$1.73
Rentals, etc.	100,018	0.03
Interest received	451,414	0.11
Total	$7,520,498	$1.87
Mining coal (less coal on hand)	$5,222,194	$1.30
Railroad transportation	990,807	0.25
Handling coal	215,492	0.05
General expenses and taxes	418,511	0.10
Interest	350,000	0.09
Total	$7,197,004	$1.79
Profits on coal	$323,494	$0.08

The total coal produced by the company was 4,017,140 tons. In addition to this it transported for others 2,211,631 tons, making a total of 6,228,771 tons carried over its lines:

Since the close of the year the company has declared dividends amounting to 7 per cent. from the profits for 1900.

The income account, condensed, shows the following results:

Profits on coal as above		$323,494
Earnings of railroads	$11,485,189	
Less expenses and rentals	8,621,291	
		2,863,898
Total net profits		$3,187,392

The report says: "The net earnings for the year were 9.16 per cent. on the outstanding capital stock, against which will be charged the cost of the stock to be purchased and retired in accordance with the stockholders' ordinance of May 9th, 1899, the provisions of which were outlined in the last annual report. Under this authority 68 shares were purchased and retired during the year.

"The Honesdale Branch of the Pennsylvania Division has been in full operation for two months, and has proved the wisdom of the change from the old gravity road to one of standard gauge.

"A general strike occurred September 15th and continued until October 29th, causing a serious interruption in the mining operations and reducing the total quantity mined 166,175 tons below that of the preceding year. Had normal conditions prevailed, the total amount would have been increased not less than from 500,000 to 600,000 tons. When it is borne in mind that many of the expenses incident thereto continued during the suspension of mining when revenue from the sale of coal was almost altogether cut off, the result of the year's business is a gratifying evidence of the earning power of the company.

"The leased lines continue to show extremely satisfactory results, thereby demonstrating anew their great importance as a factor in the company's prosperity.

"The equipment referred to in the last report has all been received, and in addition an amount to the value of $721,663 has been purchased and paid for during the year. The sum of $1,046,897 has been charged against surplus, as follows: For reduction in mine improvements, $100,000; for equipment, $450,000; for Coal Department betterment account, $236,665; for advanced royalties on coal, $200,000, and for miscellaneous items, $60,232.

"Since the close of the year, 1,350 shares of stock have been purchased and retired, so that the capital stock now stands at $34,658,200."

SMELTING IRON ORE BY ELECTRICITY.

In an editorial article on this subject, "Engineering News" reaches the following conclusions: "The heat required to reduce a pound of metallic iron from its ore amounts to 3,396 heat units. So far as this portion of the heat consumed by the blast furnace is concerned, it is certain that nothing can replace it save a similar quantity of heat or an equivalent quantity of energy in some other form. If it were possible to tear the oxygen from the iron by the direct action of the electric current, without the production of heat at all, just as much energy must be expended as when heat is used for the separation. In other words, a certain quantity of work must be done upon a pound of iron oxide to separate the oxygen from the iron, and it makes no difference whether we measure this work in foot-pounds, in heat units or in watt-hours of electric current. If this is clearly understood, the rest is easy.

"Suppose, now, that by some at present unknown process, it should be made possible to reduce iron from its ores by the direct action of electricity, and without the intervention of heat. Let us assume, further, that this process is very near to theoretical perfection; that is, that nearly the whole energy of the applied current is devoted to separating the metal from the oxide. If it were indeed perfect and could have perfectly pure ore alone to work on, then the energy required would be (as stated above) equivalent to 3,396 heat units per pound of metal. All ores contain impurities, however, which require additional energy for their elimination. It is fair to assume, therefore, that even the most perfect electric process imaginable could hardly use less energy than 4,000 heat units per pound of metal produced. We have then 4,000 heat units $\times$ 2,000 = 8,000,000 heat units as the energy which our hypothetical electric process must produce to make a ton of pig iron.

Let us next compute how much mechanical power will be required to produce this amount of energy:

"One horse-power = 33,000 ft.-lbs. per minute, hence a horse-power day of 24 hours = 33,000 × 60 × 24 = 47,520,000. The mechanical equivalent of heat is 778. That is to say, if it were possible by machinery of theoretical perfection to transform the entire work of a horse-power acting for a day into heat without loss, we should have 47,520,000 ÷ 778 = 61,080 heat units. Dividing now 8,000,000 by 61,080 we have 131. That is to say, our supposed electrical process will require one horse-power of energy acting continuously for 131 days to produce a ton of iron. In a year, therefore, of continuous day and night working 1 horse-power could produce 2¾ tons of iron.

"Coming down now to commercial comparisons, the coke required to make 2¾ tons of iron in the blast furnace is worth at present market prices about $5.50. A 24-hour horse-power of electrical current for a year is worth anywhere from $20 upward. The conclusion is, therefore, that even if a process of electrical iron smelting could be developed, operating with nearly theoretical perfection, it would be only a laboratory curiosity, since its cost of operation under the most favorable circumstances would be several times as great as the cost of the present method of reduction of iron by the combustion of fuel in the blast furnace."

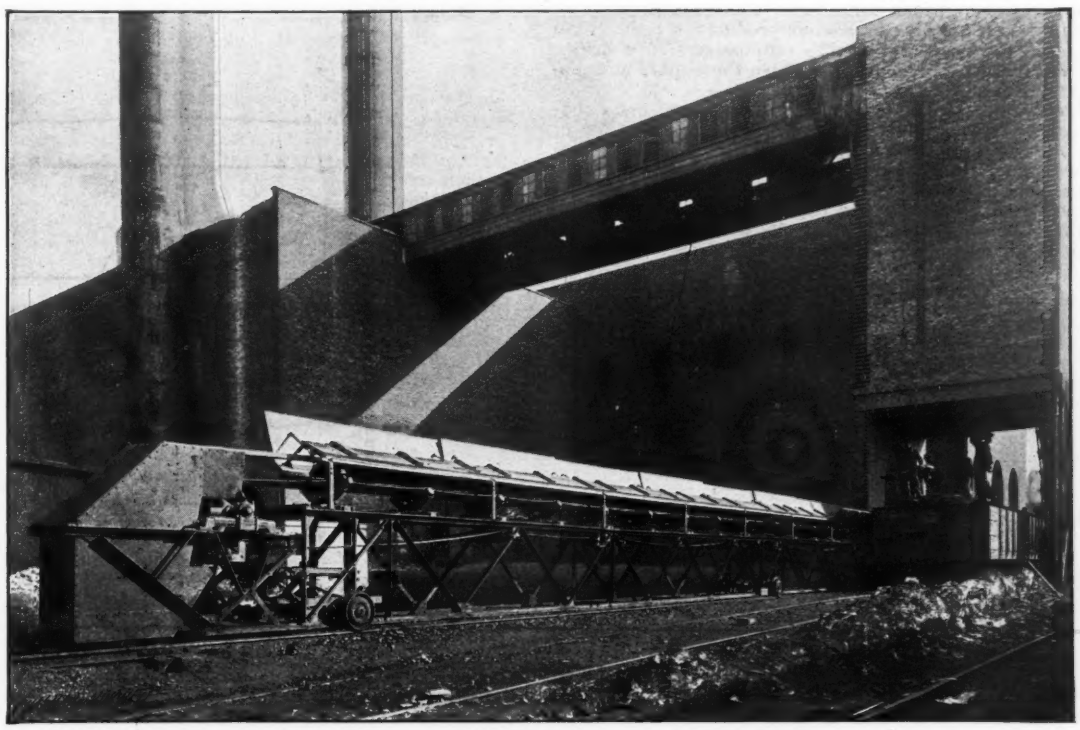
A MOVABLE COAL CONVEYOR.

Where coal is brought to the consumer in gondola cars, the cost of unloading is a serious item. This is especially true where several cars per day must be unloaded. The Robins Conveying Belt Company, of New York, has offered two solutions for this problem, both of which can be seen in operation in Chicago. The first installation was at the power plant of the South Side Elevated Railroad where fixed conveyors were built alongside the railroad track. Running in opposite directions, they both deliver the coal into the same hopper from which it is fed into a cross conveyor and carried into the storage bins. A more novel arrangement is that at the Harrison Street Station of the Chicago Edison Company. Here fixed conveyors could not be considered, as it was necessary to keep the yard clear for the handling of machinery. To meet these conditions, the Robins Company built the machine of which we print illustrations. The conveyor is mounted on a movable framework which is 90 ft. long and about 4 ft. high and supported on three sets of wheels which run on a narrow-gauge track. One electric motor serves to drive the conveyor and also to move the entire machine forward and backward. The method of using the conveyor is clearly illustrated by the photograph and diagram, the dotted lines in the latter showing that the coal from 6 cars can be carried to a common point without its being necessary to shift the cars.

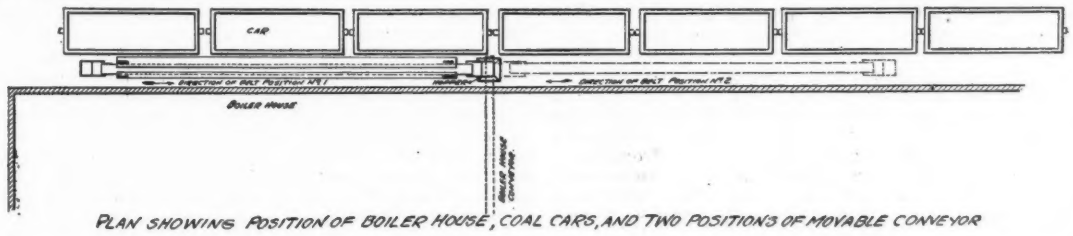
Apart from the convenience and economy of space in this arrangement, there must also be noted the large capacity and the small expenditure of power. This point is brought out by the following figures, which are the results of tests made by the engineers of the Edison Company: To drive the conveyor running empty requires 3¾ H. P. To drive it when it is loaded by 14 men scooping from the cars at the rate of 67½ tons per hour, 4⅛ H. P. is required, and to move the entire apparatus takes 5⅛ H. P.

From the diagram it will be seen that when the conveyor is moved to the second position, the direction of the belt's motion is reversed. This is accomplished with a reversing switch at the motor. To move the frame along on its track, power is communicated to the driving wheels through a friction clutch at the end of the conveyor furthest from the motor; the conveying belt being used to transmit the power.

This conveyor was built under the supervision of Messrs. Sargent & Lundy, consulting engineers of the Chicago Edison and other electric companies.



ROBINS MOVABLE COAL CONVEYOR.



PLAN SHOWING POSITION OF BOILER HOUSE, COAL CARS, AND TWO POSITIONS OF MOVABLE CONVEYOR

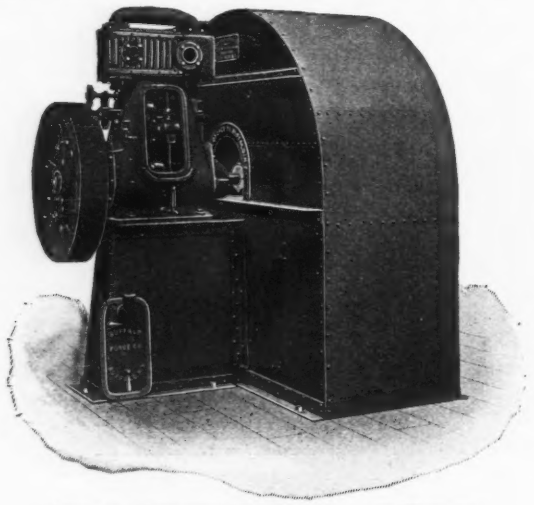
PLATINUM IN ANCIENT EGYPT.—According to "Nature," at a recent meeting of the Paris Academy of Sciences M. Berthelot discussed Egyptian metals, and the presence of platinum among the characters of a hieroglyphic inscription. A metallic box, covered with inscriptions, and dating from about 700 B. C., had a portion of one of its characters made of an alloy of platinum. The specimen was too small for a complete analysis, but from its behavior toward aqua regia it appeared to be a native platinum, possibly obtained from the alluvial deposits of Nubia or the upper regions of the Nile Valley.

BRIQUETTE MAKING IN GERMANY.—When the Westphalian Briquette Union was started in 1891, says the London "Colliery Guardian," its 13 original members turned out 482,495 tons with 25 presses; and last year the out-turn was 1,530,816 tons with 92 presses, showing an increase of 217 per cent. in the 10 years. During this period the quantity of pitch purchased for the members increased from 20,821 to 108,976 tons, in addition to which the Union bought about 60,000 tons on account of the non-syndicated works; and the circumstance that so large a quantity was procurable shows to what an extent by-product recovery is carried in coke-oven plants, at some of which not only tar but even pitch is produced. Stocks of this substance have now been formed at the Rhine ports, thus constituting a check on fluctuations in the market, the price having varied only from about 41 marks ($9.75) at the beginning to about 44 marks at the end of last year. The net amount realized by sales last year was 18,224,505 marks, giving a mean price per ton of 12.27 ($2.92) against 10.66 marks ($2.54) in 1899; and the cost of pitch delivered at the factories attained 4,744,682 marks. The consumption of briquettes for firing locomotive boilers increased last year.

A SPECIAL MECHANICAL INDUCED DRAFT FAN.

The accompanying engraving shows a special steam driven steel-plate fan designed for mechanical induced draft by the Buffalo Forge Company, of Buffalo, N. Y. The details of the construction of this apparatus present some interesting features. The direct-connected fan shown is one of two similar pieces of apparatus which together form a duplex induced draft plant installed in a large electric power plant of Northern England. Each fan is capable of handling the gases from four Galloway boilers, each 8 ft. 6 in. in diameter and 28 ft. long with a grate area of 48 sq. ft. The capacity of the fans was calculated on a basis of a coal consumption of 20 lbs. per square foot of grate surface, using a Durham coal locally known as "small bean." The steam pressure carried is about 140 lbs. per square inch. These boilers are arranged in conjunction with two economizers so that the gases are cooled to about 450° F. The fans in this instance are 100 in. in diameter and are driven at a speed of about 400 revolutions per minute, equivalent to a pressure of 2 in. of water at the fan outlet. All the gaseous products of combustion from the boilers after passing through the economizers, are drawn to the fans, which are situated on a platform above the boilers and discharged upward into the short steel stack.

The fans themselves are of the full housing, up-blast, steel-plate construction, rigidly braced with angle irons. The fan wheel is built of steel-plate blades bolted to wrought-iron spider arms and provided with conical side pieces to lend rigidity to the whole. In order to insure cool running while handling the hot gases for long periods, the fan wheel shaft is supported in a water-cooled bearing, and in addition the main bearing of the engine on the side next the fan is likewise provided with a water-cooling device.



BUFFALO INDUCED DRAFT FAN AND ENGINE.

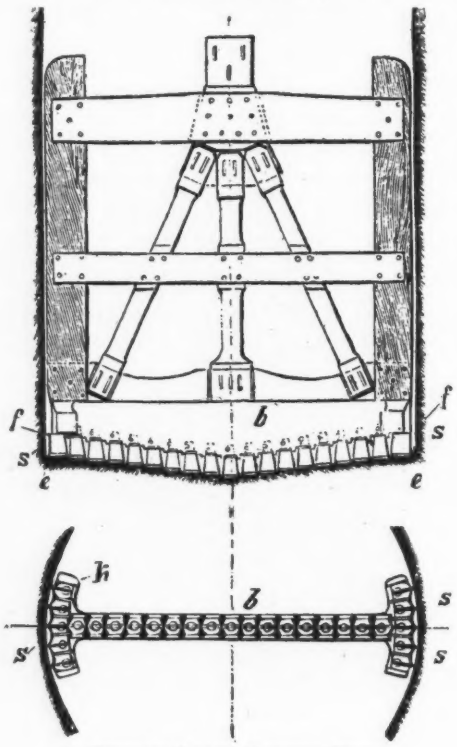
The blast wheel, which is overhung, is driven by a Buffalo vertical cross-compound engine which is supported upon a sheet steel base integral with the fan casing. The engine is designed with cylinders 4 and 6 in. in diameter with a common stroke of 5 in., and running non-condensing on a steam pressure of 130 lbs., develops 17 H. P. The various rotating and reciprocating parts work within the cast-iron frame, which by the addition of a removable side-plate is rendered oil-tight and dust proof. The engine is arranged to run in oil, and in this way all the bearing surfaces within the frame are copiously supplied with lubricant. The crank shaft is carried in bearings of ample length affixed to the frame. The low-pressure cylinder is fitted with a slide valve driven from a fixed eccentric on the crankshaft within the bed, and hence its cut-off is fixed. Steam distribution in the high-pressure cylinder, however, is controlled by a balanced and adjustable piston valve which is itself actuated by the swinging eccentric of a sensitive shaft governor. In this way the fan is maintained at a uniform speed when serving one or all of the boilers without any alteration in the position of the dampers.

Excellent steam economy is attained for an engine of this size and by the automatic oiling arrangement, frictional losses are reduced to an almost impossible minimum. The feature of tightly enclosing the engine will be appreciated when the environment in which the engine operates is recalled. The many advantages resulting from the application of induced draft to the boiler plant cannot be dwelt upon here, but it might be well to mention the marked saving effected by such apparatus in making it possible to burn the lowest grades of fuel.

A GERMAN SHAFT-SINKING DRILL.

The accompanying sketch shows a drilling machine for circular shafts, devised by Haniel & Lueg, of Dusseldorf, Germany, which is described in a recent number of the "Organ des Verein der Bohrtechniker." It is claimed that this machine provides for objections which have been made to the use of shaft drills heretofore. The sketch shows a section of the shaft and a view of the face of the drill.

The drill is composed of a framework, at the bottom of which is the cross-beam, b, fitted with transverse terminal bars, k. The beam, b, is pierced with a number of holes for the insertion of the shanks of the separate teeth forming the bottom cutters, which are then keyed in position by pegs, fitting in holes bored in the side of the beam. The peripheral cutters or head-teeth fitting on the transverse bars, k, are provided with vertical, or nearly vertical, cutting edges, s, on their rear side, as well as with the usual horizontal edges underneath, thus resembling the small bits generally used in drilling boreholes. These vertical cutters may extend all round the back of the teeth or only over a portion of same, in which latter event the remaining rear portion does not act as a cutter but is sloped back from the shaft wall in the form of a triangular or polyangular surface, as at f. In consequence of this arrangement, any stones projecting from the edge of the shaft are easily cut away by the bit; moreover, no fragments of stone can lodge on the rear cutting edges, and any pieces of rock accidentally falling between the shaft wall and the head teeth will be reduced by the latter. It is also impossible for detritus to accumulate at the back of the teeth, owing to the sloping surface there. Only one cutting edge is generally provided on the rear side, s, of each head tooth, though, if required, there may be two or even more. As a rule, the bottom cutters should be in line with those on the rear face, except when the former are set at right angles to the latter. The provision of the cutting edges, s, also tends to prevent the deviation of the shaft from the vertical, and they trim the shaft sides during the up stroke. The corners, e, remain sharp long after the bottom cutters have become blunt, and even the latter will keep sharp longer than when no lateral cutters are provided, owing to the more direct action of the bit.



A GERMAN SHAFT SINKING DRILL.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

DUTY ON STEEL GAS-HOLDERS.—Steel tubes or cylinders for holding gas under pressure are dutiable at the rate of 25 per cent. ad valorem under paragraph 130, act of 1894, and not at the rate of 35 pe rcent. ad valorem under paragraph 152, act of 1897.—Appeal of R. F. Downing & Co., from Collector of Customs at New York; Board of General Appraisers.

WHAT CONSTITUTES STATEMENT OF CAUSE OF ACTION.—A complaint in a suit, under Revised Statutes of United States, section 2326, in aid of an adverse claim filed to public lands, which alleges that the land is valuable mineral ground, constituting a part of a claim taken by complainant under the mining laws, and which has ever since been, and still is, occupied and held by him under such laws, and that the one against whom he complains is seeking to obtain title to same as a mill site, states a cause of action under the statute, the purpose of which is to provide for a suit to determine the right of possession between the adverse claimants in aid of the land department. —Dugan vs. Redding (103 Federal Reporter, 914); United States Circuit Court for California.

DRAWBACK ON BABBITT METAL EXPORTED.—On the exportation of Babbitt metal in the manufacture of which is used lead paying a duty of 2½c. per pound, antimony dutiable at ¾c. per pound, and the tin and cadmium free, a drawback will be allowed equal in amount to the duties paid on the lead and antimony, less the legal deduction of 1 per cent. The entry under which the merchandise is to be inspected and laden must show the marks and numbers of each shipping package and the number of pounds of Babbitt metal contained in each. The drawback entry must show, in addition to the usual averments, that the exported article was manufactured from the materials and in the manner set forth in the manufacturer's sworn statement of February 21st, 1901.

In the liquidation of the drawback entry, the quantity of lead and antimony which may be taken as the basis for the allowance of drawback shall not exceed 79 lbs. of the lead and 16 lbs. of antimony in each 100 lbs. of the exported article. The quantity exported shall be ascertained by a United States weigher, and a sample furnished the col-

lector of customs, whenever requested, for such analysis as he may deem necessary.—Circular of Treasury Department on Application of Merchant & Company, Philadelphia.

MINE MACHINERY OF LESSEE MAY BE REMOVED AS A TRADE FIXTURE.—Machinery which a lessee of a mine places in same for the purpose of operating a mine, though firmly attached to the realty, is a trade fixture, which he is entitled to remove within a reasonable time after the forfeiture of the lease, or its termination. A failure to remove such machinery for nine months after a forfeiture is not such unreasonable delay as entitles the lessor to retain possession, where there was no change in the position of the parties, and the lessor suffered no injury from the delay.—Updegraff vs. Lesem (62 Pacific Reporter, 342); Court of Appeals of Colorado.

A landlord who recovers the right of possession by an action of ejectment under an oil and gas lease does not become the owner of the lessee's tools and personal property left by him on the premises.—Sattler vs. Opperman (14 Penna. Superior Court Reports, 32); Superior Court of Pennsylvania.

PROOF OF CITIZENSHIP.—Under the laws of the United States (Revised Statutes, section 2321), providing that, in locating a mining claim, proof of citizenship may consist of the affidavit of the locator, does not apply where contest is made to the locator's application for the patent; and in such case the locator must prove by competent evidence that he has made a declaration of intention to become a citizen.

Under Section 2319, of the same laws, providing that mining claims may be located by citizens of the United States, if a citizen and an alien jointly locate a claim not exceeding the amount of ground allowed to one locator, such location is valid as to the citizen, or to one who has declared his intention to become such; and a conveyance by him through an alien, to another citizen, conveys a complete title to the claim located, provided all other provisions of the law were complied with. —Strickley vs. Hill (62 Pacific Reporter, 893); Supreme Court of Utah.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals, and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like, will be reproduced whenever possible. Specimens should be of moderate size, and should be sent prepaid. We cannot undertake to return them. If analyses are wanted, we will turn specimens over to a competent assayer, should our correspondent instruct us to do so, and send the necessary money.—Editor E. & M. J.)

339.—W. A. D.—The specimen is a bit of chloritic schist containing a few small crystals of iron pyrite or "fool's gold." The specimen is altogether too small to permit of any opinion as to values.

340.—Anorthite Crystals from Franklin, N. J.—C. H. Warren, in the "American Journal of Science," describes anorthite crystals from Franklin Furnace, N. J. Some of the crystals came from the limestone quarry near the railroad station. The crystals are of a dull gray color, tabular in habit and vary in size from individuals a few millimeters in diameter to large flat tables 1½ cm. long, 1 cm. wide and 2 to 3 mm. in thickness. They are few in number and are imbedded in the white crystalline limestone characteristic of that region. Flakes of graphite are plentifully sprinkled through the limestone and are plainly visible in the anorthite crystals themselves. The position in the quarry from which the specimens came was close to the contact of the limestone and the granite, and it is interesting to note that anorthite has been noticed by Lacroix as a contact mineral in limestones of the Pyrenees. It is probable that the Franklin mineral is of similar origin. Analyses show the following per cent., composition: SiO_2, 40.16; Al_2O_3, 34.89; CaO, 18.26; Na_2O, trace; $CaCO_3$, 5.30; H_2O, 1.69; graphite, .18.

The ratio of SiO_2: Al_2O_3: CaO is nearly 2:1:1 as required by the formula of anorthite, $CaAl_2(SiO_4)_2$.

341.—Cassiterite in Alaska.—In "Science," A. H. Brooks describes stream tin found in auriferous gravels of the York Gold-field in Alaska. This stream tin is found in considerable quantities on Buhner Creek, which enters the Anakovik River from the west about 3 miles from Behring Sea. The occurrence lies some 10 miles east of Cape Prince of Wales. On Buhner Creek 2 or 3 ft. of gravel overlie the bed rock which consists of arenaceous schists, often graphitic, and graphitic slates. The bed rock is much jointed, the schists being broken up into pencil-shaped fragments. They strike nearly at right angles to the course of the stream and offer natural riffles for the concentration of heavier material. The drainage basin of this stream, not more than a square mile in area, shows the same series of rocks throughout. At a few localities some deeply weathered dark green intrusives occur, which consist almost entirely of secondary minerals, but are probably of a diabase character. The slates and schists are everywhere penetrated by small irregular veins consisting usually of quartz with some calcite and frequently carrying pyrite and sometimes gold.

The stream tin is concentrated on the bed rock with other heavy minerals. A sample of the concentrate in one sluice-box yielded cassiterite, magnetite, ilmenite, limonite, pyrite, fluorite, garnets and gold, and by weight 95 per cent. tin-stone, 5 per cent. magnetite; other minerals, 5 per cent. The cassiterite occurs in grains and pebbles, from those microscopic in size to those ½ in. in diameter, with sub-rounded and rounded forms. In some cases there is a suggestion of pyramidal and prismatic crystal forms. The mineral varies in color from a light brown to a lustrous black. A second locality is on the Anakovik River, ½ mile below the mouth of Buhner Creek. One specimen from this locality was some 2 in. in diameter.

No acid intrusives nor pegmatite veins were found in the drainage basin. The nearest known granitic rocks are in the biotite granite mass which forms the promotory of Cape Prince of Wales.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course always be given to questions submitted by subscribers.—Editor E. & M. J.)

Air Compressor Explosion.—Can you cite us the particulars of a case of an explosion of an air compressor somewhere out West, said to have been caused by the oil used as a lubricant forming an explosive mixture with the air in the cylinder at the temperature due to compression?—D. S.

Answer.—Such accidents are not uncommon, the explosion, as a rule, doing no more damage than breaking or blowing out a cylinder head. We cannot cite any special case at present.

Perhaps some of our readers can give us particulars of such an explosion.

Unlisted Securities.—What is meant by putting stock on an exchange as one of the "unlisted securities"?—R. J.

Answer.—When an exchange adds a stock to its "unlisted department," is may be for one of several reasons. Generally it is either because the stock is regularly listed on another exchange, or because no full statement is submitted, so that the exchange may decline to give it the partial guarantee which regularly listed stocks receive. Putting a stock among the unlisted securities is a license to trade in it, while it is not included in the regular calls.

Boiler Horse-Power Rating—What is the rule, or standard, of rating a boiler? The usual statement is that a boiler is of so many horse-power, but there seems to be some difference of opinion as to what the boiler standard is.—Caloric.

Answer.—A boiler rated at 100 horse-power should make steam enough, under ordinary conditions, to supply a good engine developing that power. This is, perhaps, a little indefinite, and in practice the rating of a boiler depends largely upon individual makers, who adopt various methods for calculating the capacity or horse-power. The only rules approaching a standard are those of the American Society of Mechanical Engineers. That society has had the question considered by two committees, the first appointed in 1885 and the second in 1899. The latter committee substantially approved the work of the former one and recommended the following rule:

"The unit of commercial horse-power developed by a boiler shall be taken as 34½ units of evaporation per hour; that is, 34½ lbs. of water evaporated per hour from a feed-water temperature of 212° F. into dry steam of the same temperature. This standard is equivalent to 33,317 British thermal units per hour. It is also practically equivalent to an evaporation of 30 lbs. of water from a feed-water temperature of 100° F. into steam at 70 lbs. gauge pressure. . . .

"A boiler rated at any stated capacity should develop that capacity when using the best coal ordinarily sold in the market where the boiler is located, while fired by an ordinary fireman, without forcing the fires, while exhibiting good economy. And further, the boiler should develop at least one-third more than the stated capacity when using the same fuel and operated by the same fireman, the full draft being employed and the fires being crowded; the available draft at the damper—unless otherwise understood—being not less than ½ in. water-column."

You will find some excellent observations on this point in Kent's "Steam Boiler Economy," lately published.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects, issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending April 23d, 1901.

672,470. WELL-DRILLING ATTACHMENT. Everett D. Wolbert, Bakersfield, Cal. In a well-drilling attachment, mechanism for raising and dropping a tool or implement within the drill hole, consisting of a fulcrumed lever, a pulley carried at the outer end over which the drill rope passes, a revoluble cam, a slide movable upon the pulley-carrying lever adapted to be engaged by said cam, and means fulcruming the slide adjacent to the said lever.

672,475. EXPANSIBLE PACKING ATTACHMENT FOR ARTESIAN WELLS. Francisco Cavallaro, San Jose, Cal. The combination with the casing of a well, and a suction pipe therein, of an annular open-center bag encircling the pipe and having a reinforced bottom, and expansible sides, pipes entering the bag and adjustably suspending the latter, said pipes adapted to transmit a fluid pressure to the bag to distend the sides thereof to form a tight seal between the suction pipe and wall of the casing.

672,505. FILTER PRESS. John Critchlow, Stoke-upon-Trent, England. In a filter press a subsidiary frame rising above the main frame, rails located on said subsidiary frame, a carriage movable backward and forward on said rails, arms projecting downwardly from the carriage and provided with pivoted catches.

672,516. AXLE ROLLING MILL. Jacob Schinneller, Pittsburg, Pa. A roll having a surface adapted to reduce the blank and having a portion at the side of the reducing surface, said portion being in a different plane from the reducing surface and gradually receding therefrom to allow for the elongation of the blank.

672,524. AMALGAMATOR. Guglielmo Ghiglieri and James M. Schofield, Stockton, Cal. An amalgamator comprising a pendulating tray and means for imparting a longitudinal and a transverse vibratory movement thereto, a transverse series of fixed partitions, and a series of parallel amalgam rollers, and aprons removably suspended in said tray intermediate said partitions.

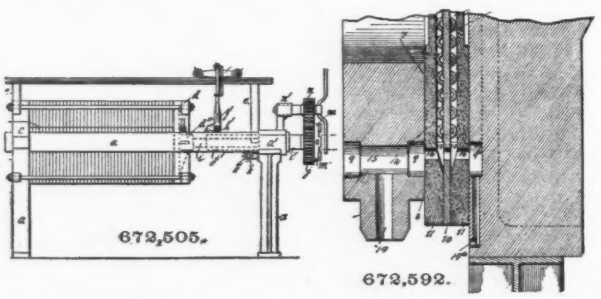
672,525. ROLLING MACHINE. Gulow A. Gulowsen, Fitchburg, Mass., assignor to the Simonds Rolling Machine Company, same place. The combination with a pair of platens, or die-carriers; of a pitman connected with each of said platens; a crank or wrist pin for each pitman, said cranks being arranged to revolve around the common axis, and one being more than half a circumference in advance of the other in the direction of rotation.

672,537. PUMP. Clarence L. Parker, Los Angeles, Cal., assignor of one-half to Irwin W. Ross, San Francisco, Cal. In a pump, the combination of a casing, a pump rod, a plunger, a valve-supporting ring, a hub on the valve ring, means for connecting the hub with sections of the pump rod carrying a plunger valve and a double plate valve hinged to the valve ring.

672,556. WELL CASING. Frederick W. Hunick, Westbend, Iowa. The combination with a pipe section, and a coupling receiving the adjacent ends of the pipe sections and provided at its center with an inwardly bent or crimped portion separating the pipe sections, of the end piece provided at its upper end with a seat receiving the adjacent pipe section, said end piece being provided with exterior ears and having its bore tapered upwardly from its lower end to the said seat, and the wires secured at their lower ends to the said eyes and provided at their upper ends with hooks engaging the upper end of the uppermost pipe section.

672,568. WIRE-DRAWING MACHINE. John H. O'Donnell, Waterbury, Conn., assignor to the Waterbury Machine Company, same place. The combination of dies arranged in sets, with the dies of each set side by side, of rolls or heads in advance of certain of the dies and rotated the forward faster than the rearward, an idler rearward of one of the dies, and a roller or head on the same shaft as the rearward roll or head before mentioned, and made of such diameter as to run faster than the forward roll.

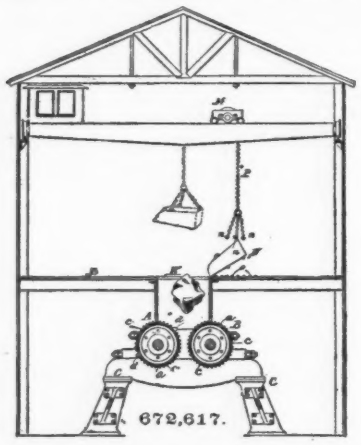
672,592. FILTER PRESS. Richard C. Congdon, Philadelphia, Pa. A filter ring provided upon each of its faces with annular seats having



between them an annular groove, said groove extending all the way around the ring.

672,601. TAPPING DEVICE FOR ELECTRIC FURNACES. Oscar Frolich, Steglitz, near Berlin, Germany. In electrical furnaces provided with a tapping hole at their lowest point a tapping arrangement which consists of an elbow-shaped tube fitted on to said tapping hole, and means for preventing the access of air to the material in the tube.

672,616 and 672,617. METHOD OF AND APPARATUS FOR BREAKING ROCK. Thomas A. Edison, Llewellyn Park, N. J. In apparatus for breaking rock by kinetic energy, the combination of a pair of independently-driven and disconnected massive rolls having roughened or irregular surfaces, a power connection delivering power to



both the rolls insufficient to break the rock by direct application of the power, and means for periodically delivering charges of rock to such rolls at sufficiently infrequent intervals to permit the rolls to recover sufficient speed to effect the successive breaking operations.

672,637. PROCESS OF TREATING ZINC-BEARING ORES FOR OBTAINING ZINC, ETC. Sherard O. Cowper-Coles, London, England, assignor to the Cowper-Coles Metal Extraction Syndicate, Limited, Mellanear Haeyle, England. A process for the treatment of complex zinc ores, such as those known as Broken Hill ore, consisting in crushing, screening and roasting the ore, then placing it in leaching vats, then treating it with a weak solution of sulphuric acid to abstract the zinc and copper, then passing such solution containing zinc sulphate and copper sulphate through a body of carbon and an electropositive metal to recover the copper, and then electrolyzing the remaining solution to recover the zinc.

672,650. MINER'S SQUIB. Evan Reese, Plymouth, Pa., assignor of two-thirds to Enos Williams and J. P. Biehl, same place. A miner's squib having the match or fuse thereof secured to and projecting from the tube at a point removed from the forward end thereof.

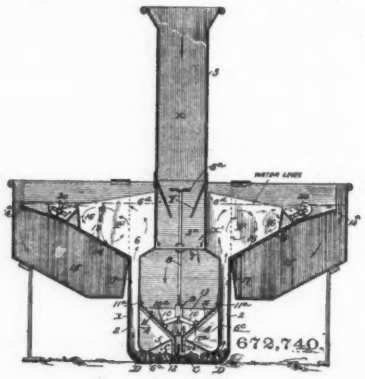
672,663. APPARATUS FOR HANDLING SHEET-METAL PLATES DURING THE PROCESS OF COATING WITH MOLTEN METAL. John Baxter, Newcastle, Pa., Charles Hillman, Middletown, Ind., and Oliver Clarke, Newcastle, Pa. In combination with means for coating sheet-metal plates with molten metal, an endless conveyor, electromagnets provided in pairs and located at intervals in the length of the endless conveyor, endless conducting strips secured to said endless conveyor and having the helices of the respective pairs of electromagnets connected therewith at one end and having the opposite end electrically connected, and brushes forming terminals of an electric circuit and in electrical connection with the respective endless conducting strips.

672,667. ROLLING SHEET METAL. Charles B. Cushwa, Pittsburg, Pa. A method of rolling sheet metal, consisting in first heating the ingot or other piece of metal, rolling it into a bar, cutting it into suitable lengths, passing these pieces on double conveyors to a double set of rolls, and finishing the sheets on a set of rolls common to both the other sets, without reheating the metal.

672,689. MACHINE FOR BENDING SHEET-METAL STRIPS INTO TUBULAR FORM. Loren E. Whitehouse, Springfield, Mass. The combination with a mandrel having a longitudinal midrib constructed at its end portion with a recess of a wheel or roll overlying the recessed portion of the mandrel.

672,694. APPARATUS FOR THE MANUFACTURE OF ILLUMINATING GAS AND COKE. Edward R. Besemfelder, Charlottenburg, Germany. In an apparatus for the continuous production of illuminating gas, the combination of a series of connected superposed retorts, rotary conveyors therein, a conducting tower having a rotary delivery mechanism for the glowing material below its lower contracted end, means for connecting water-gas generators with said delivery mechanism, and a coke-cooling chamber below said tower.

672,739 and 672,740. AMALGAMATOR. Lewis Mayhew, New Whatcom, Wash., assignor to Sanford B. Mayhew, same place. The combination with an amalgamating pan having a central pendent well, and portions inclined toward the well; of the hopper fitted above the well, having its outer walls parallel with the well walls, whereby to form passages from the well to the inclined pan portions, said hopper having its bottom dished upward from its outer edges,



whereby an enlarged circulating space is provided under the hopper, and having a central discharge nozzle projected below the dished bottom of the hopper, said enlarged circulating space communicating with the side passages of the well through a contracted opening between the extreme lower edge of the hopper and the bottom of the well.

672,773. MANUFACTURE OF BILLETS. William B. Hughes, Philadelphia, Pa. The mode of forming billets, consisting in subjecting to shearing and compressing action, successive sections of an ingot, while the latter still retains sufficient of its initial heat to render it plastic.

672,803. BLOWER OR PUMP. Egbert A. Osborne, Fort Smith, Ark. A rotary blower or pump comprising a concentrating dome, a spherical exhaust, and suction devices interposed between the dome and exhaust.

672,814. DRILL-CASING EXTRACTOR. George S. Wilson and Samuel E. Loy, Aurora, Mo. The combination of a uniform rod or stem having an enlarged head on its lower end, an exteriorly-coned sleeve slidingly mounted on said stem small end up and having a flange on said small end, a stepped segmental chuck movably mounted on said sleeve, spring latches passing through apertures in said flange and joined to said segments, means for engaging said latches to raise said segments.

672,858. CAISSON. William H. McFadden, Pittsburg, Pa., assignor to Consolidated Mining and Dredging Company, same place. A caisson having in combination a working chamber having an open lower end, a water-sealed conduit extending from the working chamber to a point above the level of the water, mechanism for raising and lowering material arranged within the conduit, and a movable raising and lowering mechanism arranged within the working chamber.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending March 30th, 1901.

2,278 of 1900. CONCENTRATOR. A. A. Francis, Bergamo, Italy. A concentrating table with longitudinal reciprocating motion, combined with a rocking motion round the longitudinal axis.

4,930 of 1900. FIRE-DAMP INDICATOR. S. A. Rosenthal, London. Indicators for fire-damp in mines, using spongy platinum or palladium.

6,924 of 1900. GAS CATCHER. P. Naef, New York, U. S. A. Improvements in blast furnaces, etc., for catching gases and other by-products.

7,220 of 1900. MINE-CAR BRAKE. J. Muirhead, Laurium, Michigan, U. S. A. Improved brakes for mine trucks on steep inclines.

8,481 of 1900. OPEN-HEARTH STEEL PROCESS. B. Talbot, London. Improvements in the inventor's continuous steel process.

12,004 of 1900. BRIQUETTING MACHINE. R. Kuhn, Bruch, Germany. In briquetting machines, improved mechanism for forcing the material into the molds.

13,644 of 1900. ALUMINUM SOLDER. H. Lange, Vesteroas, Sweden. A method of soldering aluminum with an alloy of zinc and aluminum.

Week Ending April 6th, 1901.

5,647 of 1900. GALVANIZING IRON. S. O. Cowper Coles, London. Method of preparing iron plates for galvanizing, in order to increase the adhesion.

8,734 of 1900. BALL-MILL FEEDER. A. Wiss, Stuttgart, Germany. Improved form of inlets for tube and ball mills.

8,748 of 1900. CUTTER FOR BORING MACHINES. A. W. Manton, London. Improved cutters for machines for boring headings.

9,046 of 1900. SULPHIDE REDUCTION. L. M. Bullier, Paris, France. A method of reducing metallic sulphides with calcium carbide.

22,209 of 1900. SAMPLING MACHINE. A. C. Calkins and F. W. Braun, Los Angeles, Cal., U. S. A. Improved form of sampler for assayers, of the revolving-cone type.

1,491 of 1901. METALLIC OXIDE TREATMENT. C. G. Sudre and C. V. Thierry, Paris, France. Treatment of oxides to render them more refractory.

PERSONAL.

Mr. M. D. Kelly is the new superintendent of the Old Bonanza Mine, Sonora, Cal.

Mr. F. R. Culbertson has resigned as manager of the Tiger-Poorman Mine at Burke, Idaho.

Mr. Hiram Jeter, of Indianapolis, Ind., is in New York on business for the Grant Mining Company.

Mr. J. A. Fleming, president of the Black Warrior Copper Company, of Globe, Ariz., has been in Philadelphia, Pa.

Mr. W. R. Todd, secretary and treasurer of the Quincy, Adventure and Rhode Island mining companies, is visiting the copper district of Michigan.

Mr. H. T. Hall, of St. Joe, Mo., who is interested in the Eureka Mining Company, which owns property near Oak Springs, Gila County, Ariz., has been in Globe.

Mr. W. M. Brewer, for several years travelling correspondent of the "Engineering and Mining Journal" in British Columbia, is on a visit to New York City.

Mr. Richard Eames, Jr., manager of the Arizona Gold and Copper Company's smelter at Patagonia, Ariz., has been in North Carolina and is in New York on a business trip.

Messrs. W. H. Davis, H. M. Kaercher and P. M. Cassidy, of Youngstown, O., stockholders of the Dixie Queen Company, have been visiting the company's property at Dixie, Idaho.

Mr. H. Kilburn Scott, mining engineer, has opened an office and laboratory in Rio de Janeiro, Brazil, and is prepared to report on mining properties, analyze ores, or to undertake any kind of mining work.

Mr. Edward Skewes, mining engineer, formerly of Colorado, and more recently engaged in Western Australia, is now examining some gold properties in the Ashanti Region of West Africa for London parties.

Mr. Merrill Watson, manager of the New York Expanded Metal Company, delivered a lecture on "Iron and Concrete in Construction" recently before the students of the Rensselaer Polytechnic Institute at Troy, N. Y.

Mr. Henry Huntington Miller, mining and metallurgical engineer, of New York City, has accepted an engagement with the American Copper Company as chemist and metallurgist, at the mines near Somerville, N. J.

Mr. H. H. Schlapp, a mining man of Colorado, has just returned from Australia, where he has been managing the Boulder Main Reef Gold Mining Company, whose property is located in the telluride belt of the Kalgoorlie District.

Mr. H. Van F. Furman returned to Denver, Colo., a few days ago after an extended professional trip to Mexico, in a district where thus far no American capital has been invested. As soon as he completes his reports he will leave for Arizona.

Mr. H. W. Harding, mining engineer, of Denver, Colo., has gone to California. He will stop in Arizona on professional business and at San Francisco will take steamer for Mazatlan, to spend some time in Mexico in the interests of a syndicate intending to make investments there.

Mr. W. Melville Drennen, mayor of Birmingham, Ala., is to deliver a paper at the next meeting of the Southern Industrial Association at Philadelphia, Pa. Mr. Drennen is interested in the Palos Coal and Coke Company and in several other enterprises in and around Birmingham.

Mr. Edwin A. Sperry, of Denver, Colo., who had charge for the owners at Biwabik Mine, Mesabi range, last year, has returned to Duluth, and will be on the Mesabi more or less this summer. His headquarters will be at Denver, however, where he is perfecting his Sperry slime table.

Mr. Chas. M. Jarvis, owing to the determination of the United States Steel Company to concentrate all operating departments of the constituent plants at Pittsburg, has resigned as vice-president in charge of the operating department, as he does not care to change his residence from New England.

Mr. John Harkins, of Pratt City, Ala., has been appointed by Governor W. J. Samford one of the assistant mine inspectors of Alabama, succeeding Mr. John McDonald, whose term expires on May 15th. Mr. Harkins is an experienced coal miner and served a term in the State legislature. Mr. J. deB. Hooper is chief inspector of mines in the State.

Mr. Charles Butters recently visited Salt Lake City after an absence of several months. He was accompanied by Mr. Arthur W. Ablett, of Johannesburg, S. Africa. Mr. Butters is to experiment with the Elmore process of concentration at Cripple Creek, Colo. He recently secured the dumps of the Union Mining Company at Virginia City, Nev.

Mr. F. W. Hill, for the past 4 years auditor of the Oregon Short Line Railway at Salt Lake, has resigned to take the position of controller of the American Smelting and Refining Company, with headquarters in New York. Previous to the segregation of the Oregon Short Line and the Union Pacific 4 years ago, Mr. Hill was for 19 years connected with the auditing department of the Union Pacific at Omaha.

Major R. G. Edwards Leckie, for the past 2 years the general manager of the Republic Consolidated Gold Mining Company, at Republic, Wash., has resigned his position to fill other important engagements. D. F. Hallahan, the secretary of the company, has also resigned and will visit the Atlantic Coast on mining business. George Lanskail, of Montreal, Que., succeeds him. Mr. Leckie's successor has not yet been appointed.

OBITUARY.

Henry Johns, Sr., an old copper smelter and a recognized authority in that line of work, died at his home in Pittsburg, Pa., recently, in the 76th year of his age. He had lived in Pittsburg 53 years.

Mr. Johns was born in Wales, where he learned copper smelting. When 21 years old he went to Baltimore, and a year later came to Pittsburg. Soon after his arrival in Pittsburg he and his brother, William Johns, built a furnace for smelting copper ore, which is said to have been the first furnace ever built that refined Lake Superior copper ore successfully. The furnace was built for the Pittsburg & Boston Mining Company, which had a plant in Pittsburg. After Mr. Johns had demonstrated his ability to smelt Lake Superior copper ore, he was installed as manager of the smelting department of the works, a position he held 51 years, retiring only 2 years ago. During this time Mr. Johns made many changes in the smelting of copper, but his greatest work was the designing of a furnace with a movable top, by which masses of native copper could be put in without disturbing the hearth and doing considerable damage. Charging the old furnaces also was slow and laborious.

Mr. Johns is survived by his wife and 7 children.

SOCIETIES AND TECHNICAL SCHOOLS.

Columbia University.—The new metallurgical laboratory course is for students of mining engineering as distinguished from those in metallurgy. It does not aim to reproduce metallurgical processes as carried out on an industrial scale, but attempts chiefly: first, to give the student such acquaintance with the instruments of precision of metallurgy that he will be able to understand and interpret data obtained with them, and will know how to acquire actual skill in their use; secondly, to familiarize him with the principles, the more important phenomena, and the means of control, of certain typical processes.

The subjects taught are microscopy, pyrometry, the thermal treatment of steel, roasting copper ores, desilverizing lead.

Engineers' Club of St. Louis.—At the meeting on May 1st 20 members and 5 visitors were present.

The subject of the evening was an account by Mr. Flad of his recent trip to Europe, illustrated by lantern slides of kodak snap-shots taken by him during the trip. Among the views shown were many of the different filtration plants which he visited, some of these plants being in successful operation and some in process of construction, all of which were described in more or less detail.

The following committee on prizes was announced: B. H. Colby, chairman; J. A. Ockerson, Carl Gayler, W. A. Layman, E. R. Fish.

The chair announced as the subject of the next meeting a paper by Mr. Duncan F. Cameron on "Coal Supply of St. Louis and Adjacent Territory."

The Tokyo Imperial University of Tokyo, Japan, publishes a calendar printed in English of over 300 pages which contains much interesting information about what must be considered one of the most promising educational institutions in the world. As at present organized the university practically came into existence in 1886. It now comprises colleges of law, medicine, engineering, literature, science and agriculture. The course of study at the different colleges covers 3 years. The college of engineering offers courses in civil, electrical and mechanical engineering, naval architecture, technology of arms, architecture, applied chemistry, technology of explosives and mining and metallurgy. The total number of students enrolled in the university is 2,700. A striking illustration of the rapidity with which Japan has adopted the scientific methods and learning of the west is the very small proportion of Europeans among the professors and instructors, nine-tenths being Japanese. The catalogue contains a long list of papers and treatises prepared by professors, instructors and advanced students in the university. Many of these were written in English.

National Academy of Sciences.—At the recent annual meeting of the Academy in Washington, Professor Alexander Agassiz was elected president in place of Dr. Wolcott Gibbs, who resigned in April, 1900. Dr. Arnold Hague was elected home secretary and Professor Ira Remsen foreign secretary. The following gentlemen were made members of the Academy: Dr. George F. Becker, of Washington, Prof. J. McK. Cattell and T. M. Prudden, of New York; Prof. E. H. Moore, of Chicago, and Prof. E. F. Nichols, of Ithaca. The titles of papers presented are as follows: Henry L. Abbott, "The Climatology of the Isthmus of Panama"; R. S. Woodward, "The Effects of Secular Cooling and Meteoric Dust on the Length of the Terrestrial Day"; Alpheus Hyatt, "The Use of Formulae in Demonstrating the Relations of the Life History of an Individual to the Evolution of Its Group"; E. B. Wilson, "Artificial Parthenogenesis and Its Relation to Normal Fertilization"; Carl Barus, "Simultaneous Volumetric and Electric Graduation of the Condensation Tube"; W. O. Atwater, "Table of Results of an Experimental Inquiry Regarding the Nutritive Action of Alcohol"; Theo. Gill, "The Significance of the Dissimilar Limbs of the Ornithopodous Dinosaurs"; J. W. Powell, "The Place of Mind in Nature: The Foundation of Mind"; Alexander Graham Bell, "Conditions Affecting the Fertility of Sheep and the Sex of Their Offspring"; S. P. Langley, "The New Spectrum."

INDUSTRIAL NOTES.

The business address of the Weston Electrical Instrument Company, in its new plant, is Waverly Park, Essex County, N. J.

The Baldwin Locomotive Works, of Philadelphia, Pa., is to ship 10 locomotives to Kobe for utilization on the Japanese railways.

The Marion Steam Shovel Company, of Marion, O., is preparing to erect a blacksmith shop 225 by 80 ft, adjoining its new foundry recently completed.

The British Westinghouse Electric and Manufacturing Company, Limited, has acquired a further 25 acres of land for the erection of additional works in Manchester, Eng.

The Joseph Soisson Fire Brick Company, of Connellsville, Pa., manufacturer of coke oven brick, silica brick, fire brick and paving brick has recently put in operation a crushing and

Within the past few days the Mine and Smelter Supply Company, of Denver, Colo., has received an order for 10 Wilfley concentrators from the Tamarack Mining Company, of Calumet, Mich.

Fraser & Chalmers, of Chicago, Ill., have obtained a contract for the shipment of a 10-stamp battery, with mortars and all requisite accessories, to the New Heriot gold mines, South Africa.

The Arthur Fritsch Foundry and Machine Company, of St. Louis, reports its shops well filled with work, including considerable machinery, jigs, etc., for the mining districts of Missouri and Kansas.

The United Lead Corporation, of Philadelphia, has bought the new building formerly used by the Bridgewater Manufacturing Company, Chester, Pa., and the plant will be enlarged for the manufacture of white lead.

The Southern Cement Company, of Birmingham, Ala., which began shipping its product on March 10th, has been running 15 hours a day. The capacity of the works at present time is 600 bbls. of cement per day. The company makes Portland cement and hydraulic cement.

The Robbins Conveying Belt Company, of New York City, is contemplating erecting a large addition to its plant at Passaic, N. J., for the manufacture of patented coal conveying machinery, and will install considerable new machinery, including machine tools and special machines.

The Compania Fundidora de Ferro y Acero de Monterey, which is erecting a large plant at Monterey, Mex., has awarded a contract to the William Tod Company, of Youngstown, O. The order calls for one pair 40-in. by 60-in. reversing engines, geared, and two pair 36-in. by 48-in. machines of a similar description.

The Pelton Water Wheel Company, of New York City, recently obtained an order for 10 miles of steel riveted pipe, to be utilized by one of the principal tin mining companies in the Malay Peninsula. The piping varies from 8 to 24 in. in diameter. The contract stipulates for completion of shipment inside of 6 months.

The Standard Electrical Company has turned the current into its transmission wire leading from the generating plant on the Mokelumne River to San Jose, Cal., a distance of 148 miles, the longest in the world. The turning on of the current was to test the efficiency and carrying capacity of the line. The trial was satisfactory.

The American Stoker Company, with New York offices in the Bowling Green Building, has secured contracts for stoker equipments to be installed in the Monterey and Aquas Calientes (Mexico) plants of the American Smelting and Refining Company. Seven equipments will be utilized in the first-named plant, while 3 have been ordered for Aquas Calientes.

The Richmond Locomotive Works, of Richmond, Va., have shipped twelve 16 by 24-in. 10-wheeled passenger locomotives to the Finland State Railways, Helsingfors, Finland. These locomotives are duplicates of 10 engines built by the Richmond Works for the Finland State Railways during last year and is the third order received from the same source.

The Jeanesville Iron Works Company, of Jeanesville, Pa., has added largely to its stock of pumps at the Denver branch store. One of these is a compound condenser designed to lift 300 gal. per minute to a height of 800 ft. The company is building for the Vindicator Mine at Cripple Creek a 1,200-ft. lift compound condenser with a capacity of 300 gal. per minute.

The Harrington & King Perforating Company, of Chicago, Ill., states that it has been running its works on full time for months. The company is now at work on some very heavy mining orders which include car-loads from the Homestake Mining Company, of Lead, S. D., and the Anaconda Copper Mining Company, of Anaconda, Mont. The company's export business is steadily growing.

Noyes Brothers, of Sydney, N. S. W., one of the principal concerns handling American machinery in Australia, have placed an order with Westinghouse, Church, Kerr & Company, of New York City, for 30 compound-type engines of various sizes. Ten belted-type generators were also requisitioned for. The machines, which are valued at nearly $50,000, will be built at the Westinghouse Shops, Pittsburg.

The Stanley Electric Manufacturing Company, of Pittsfield, Mass., has received an order from the Castner Electrolytic Alkali Company, of Niagara Falls, N. Y., for 8 S. K. C. motor generators, each set having a direct-current output of 500 Kw. These machines will take the current from the Niagara Falls Power Company at 2,200 volts, 25 cycles, converting same into direct current of 245 volts for electrolytic work. The contract includes a complete switchboard equipment for handling the 8,500 kw.

Representatives of the co-operative glass factories of the United States have formed a trust to be known as the Federation of the Co-operative Window Glass Companies of America. The officers are as follows: President, O. Jacquemain, Matthews, Ind.; vice-president, Mr. Phillapart, Matthews, Ind.; secretary, Mr. Patterson, Converse, Ind.; directors, O. Jacquemain, Mr. Phillapart, Mr. Patterson, Jules Quertinmont, Point Marion, Penn., and B. B. Seey, Matthews, Ind.; purchasing and disbursing agent, Leopold Hambourg, Marion, Ind.

Charles H. Besly & Company, of Chicago, Ill., report their general business as very good. The company is making large shipments of "Helmet" oil, "Bonanza" and "Badger" oil cups. The company, at its factory at Beloit, Wis., is very busy in its tap department and is running 22 hours daily in its oil cup department. The firm also states that it has never sold so many Gardner disc grinders as at the present time and has just shipped an entire car-load of Gardner grinders on orders for delivery in New York, Pennsylvania and New England.

The directors of the Tennessee Coal, Iron and Railroad Company organized recently by electing Don H. Bacon chairman of the board; N. Baxter, Jr., president; F. S. Witherbee, vice-president; L. T. Beecher, secretary and treasurer, and Chas. Perdon, assistant secretary and treasurer. The Executive Committee will consist of James T. Woodward, E. R. Chapman, Albert B. Boardman, Fred. H. Benedict, James H. Smith, F. S. Witherbee, Cord Meyer and William Barbour. The Executive Committee has been reduced from 10 to 8 members, leaving out W. S. Gurnee, Jr., and D. J. McComb.

Furnace No. 4 of the Carrie group of furnaces of the Carnegie Steel Company at Rankin, Pa., was blown in recently. Furnace No. 3, of the same size as No. 4, was blown in several months ago. These furnaces are the largest in the world and their daily output will ultimately be 700 tons per day each. Furnace No. 1 is being dismantled. James Lappan & Company have the contract for the enlargement of Furnace No. 2. The capacity of these furnaces, at present about 300 tons each daily, will be increased to about 500 tons daily. The rebuilding will require about 6 months. When completed the group of 4 furnaces will have a daily output of nearly 2,500 tons.

As a result of the absorption of the American Steel and Wire Company by the United States Steel Corporation the number of directors of the former company has been reduced from 15 to 4, the following directors resigning: John W. Gates, John A. Drake, Isaac L. Ellwood, Randall Morgan, P. A. B. Widener, Thomas Dolan, Stewart H. Chisholm, Thomas F. Ryan, Philip W. Moen, James Hopkins and H. Clay Pierce. Mr. Gates also resigned as chairman. William Edenborn, Alfred Clifford, W. P. Palmer and Dr. L. D. Ward remain on the board. The executive offices of the company will be moved to Pittsburg, Pa., where the president and treasurer are now located.

The ingot mold consolidation which is being formed with a capital of $2,000,000, has organized by the election of the following officers and directors: George Mesta, of the Mesta Machine Company, president; George H. Boyd, of the Thomas D. West Foundry Company, vice-president; Reed F. Blair, of the Marshall Foundry and Construction Company, secretary, and Edward Thomas, of James E. Thomas & Company, treasurer. These, with the following, constitute the board of directors: William Yagle, of William Yagle & Company, Pittsburg, and W. D. Marshall, of the Marshall Foundry and Construction Company, Pittsburg. The new company starts with a nominal capital of $50,000 under a Pennsylvania State charter secured recently.

TRADE CATALOGUES.

"Impressions and Expressions Regarding Protective Paint" is the title of a little 28-page pamphlet issued by the Goheen Manufacturing Company of Canton, O. It sets forth the merits of the company's "carbonizing coating" for protecting iron and steel.

In the "Doings of Expanded Metal" the Expanded Metal Companies describe a concrete and expanded metal reservoir at Antwerp, Belgium, ammonia tanks of somewhat similar construction at the Racine, Wis., gas works, and also the construction of the power house of the Capitol Power Company near Ottawa, Ont.

Edson pile sinking outfits are described in a little 16-page pamphlet sent out by the Edson Manufacturing Company, of Boston, Mass. The company states that with its apparatus 3 men can sink in good bottom from 30 to 50 poles with 6-in. to 12-in. butts in one day.

The Joseph Dixon Crucible Company of Jersey City, N. J., continues to send out a variety of trade publications calling attention to the many uses of Dixon's graphite productions. One of the company's latest productions is "graphitoleo," for bicycles, gun locks and light machinery.

The Chicago Portland Cement Company, of Chicago, Ill., issues an artistic 64-page pamphlet describing the company's plant at La Salle, Ill., and calling attention to the company's "Chicago A. A." Portland cement. The pamphlet gives views of many structures in which the company's cement has been used, and contains numerous testimonials from users.

The Marine Iron Works, of Chicago, Ill., makers of marine engines, boilers, machinery and complete steam craft, has issued catalogue No. 14, describing the company's marine engines and boilers. These include fore and aft compound engines with high pressure cylinders 5 to 11 in. in diameter; triple cylinder fore and aft and vertical compound marine engines.

The E. W. Bliss Company of Brooklyn, N. Y., builds a great variety of machine tools. Catalogue No. 2 issued by the company is a 24-page pamphlet with excellent half-tone cuts, describing the Stiles power punching presses. These are built in 10 sizes and in a variety of styles. Catalogue No. 3, a similar 24-page pamphlet, describes the Bliss straight-sided power presses. These are especially designed, the company states, for trimming drop forgings, but are also adapted for punching or stamping heavy blanks in the manufacture of light machinery and many hardware articles.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

Petroleum Development.—There was a general revival of activity in the Pennsylvania and Trenton fields during April, and all sections show a heavy increase in wells completed and new production. April completed more wells than any month so far the present year, but the new production falls short of the January figures. The new work under way was greater than that of any month since last November. While the efforts of the wildcatters toward the discovery of new pools proved uniformly disastrous, the territory that was generally regarded as certain proved the mainstay of the new production, says the "Oil City Derrick." The lower Southwest came to the front with several gushers of the first order. Over 47% of the wells completed in Southeastern Ohio during April proved unproductive. The Legionville District of Beaver County continues to supply some good wells. Seventeen productive wells, with 615 bbls. production and 4 dry holes, were furnished in this pool during April.

During April 970 wells were completed in the oil-fields, 218 were destitute of oil in paying quantities, and the new production summed up 14,884 bbls., an increase as compared with March of 228 wells completed, 4,541 bbls. production and 38 dry holes.

On April 30th the count of new operations showed 537 rigs and 944 wells drilling under way. This was an increase of 28 rigs and 61 wells drilling, or a net increase of 89 over the figures at the close of March.

Tri-State Coal and Coke Company.—The principal independent coal and coke producers of Western Pennsylvania, Eastern Ohio and West Virginia have formed a selling agency, to be known as the Tri-State Coal and Coke Company. The capital is $100,000. The annual output of the companies represented is said to aggregate 1,000,000 tons of coal and coke. The combination embraces the coal brokerage business of T. J. Easter and William Wilson, of Westmoreland County, and Frank Skelly and two operators of Fairmont, W. Va. The officers of the company are T. J. Easter, president; William Harris, vice-president; G. W. Eisenbeis, treasurer, and Roy Wise, secretary.

ALASKA.

Douglas Island.

Alaska-Treadwell Mining Company.—The company's report for April shows 34,339 tons ore crushed, yielding $39,726, and 591 tons sulphurets, valued at $23,000. The total yield was $62,726, an average of $1.80 per ton. Expenses, $45,883.

ARIZONA.

Gila County.

American Mines Development Company.—This company of Minneapolis, Minn., has taken over 5 claims near the head of Pinto and Mineral creeks, on which it has had a bond for some time. The claims were owned by Richard Welch.

Bobtail Mines Development Company.—This Minneapolis, Minn., company is starting work on the claims it controls on the north fork of the east branch of Mineral Creek. F. D. Adams, of Oakland, Cal., is superintendent.

McCoy.—At this group of claims near Globe the shaft on the Tiptop is down 100 ft. and some drifting has been done showing a shoot of oxydized copper ore 6 in. to 3 ft. wide. Five men are at work.

New York and Arizona Copper Mining and Smelting Company.—Development work on the Collins group of claims on the North Fork of Mineral Creek has started. T. S. Collins is in charge.

Pinto Creek Mining and Milling Company.—This company has 3 shifts at work on the Yo Tambien Claim. L. M. Teele, of Globe, is Superintendent.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Price.—This mine, 3 miles north of Plymouth, is being developed by the Chicago Mining Company. A 2-compartment incline shaft is being sunk on the ledge. The steam hoist just put in will enable the company to sink to 500 ft. The ore hoisted is said to be high grade.

Zeila.—The canvass plant on this property at Jackson, consisting of 2 concentrators, 2 hydraulic pumps, one large centrifugal pump and 42 tables, is considered one of the finest in the State. The ore although low grade is treated at a profit.

Calaveras County.

(From Our Special Correspondent.)

Field.—This old mine below Angels, comprising 120 acres, has passed into the hands of a syndicate headed by M. P. Morgan. Work will begin at once. In past years the property paid well, but was not worked to any depth.

Contra Costa County.

(From Our Special Correspondent.)

Pacific Coast Smelting and Refining Works.—

The works of this company at Seal Bluff Landing are completed and as soon as tests have been made will blow in and run steadily with a capacity of from 100 to 125 tons per day of 24 hours. The copper from the converters will be shipped to refineries in the East.

Eldorado County.

(From Our Special Correspondent.)

Vandalia.—The new plant being transported to this mine ½ mile northwest of Oro Fino, consists of a roaster, roller, crusher and cyanide equipment, of an estimated capacity of 400 tons per day. The force of men is to be increased as soon as the plant is in working order. Oil is used for fuel.

Fresno County.

(From Our Special Correspondent.)

Copper King.—The ore body developed in the winze 25 ft. below the lowest or 500-ft. level of this mine is reported 18 ft. wide, with assays averaging as high as 12% copper. The 3 traction trains operating between the mines and the Southern Pacific Railway, a distance of 16 miles, are now hauling 85 tons per day, but as the wagon roads improve the capacity will be increased to over 140 tons every 24 hours.

Kern County.

(From Our Special Correspondent.)

Bobtail.—This mine at Mojave has been purchased by Woods, Stag and Congdon, who are getting in supplies and tools preparatory to starting men at work. Two car-loads of ore recently milled at the Red Dog Mill yielded well in free gold.

Mariposa County.

(From Our Special Correspondent.)

Frances.—The shaft at this mine on Mariposa Creek, about 7 miles southwest of Mariposa, is down 300 ft. on a ledge which averages 5 ft. wide. The 10-stamp mill is crushing steadily and a large quantity of sulphurets is ready for shipment to the smelter. About 40 men are employed. J. L. Madden is superintendent.

Hornitos.—This old mine near Hornitos has been bonded to Richard O'Brien, who represents parties in the State of Washington.

Long Mary.—This mine on the west end of the grant owned by the Long Brothers is being worked. About 180 tons of ore was recently milled at Princeton, yielding $48 free gold and $8 in sulphurets per ton.

Mariposa Commercial & Mining Company.—This company has commenced the work of excavating for the foundation of the dam across the Merced River at Benton Falls. It is the intention of the company to install an electric plant to furnish power and light.

Nevada County.

(From Our Special Correspondent.)

Golden Treasure.—The owner of this mine near Grass Valley, Geo. H. Pein, has started work with a new 4-stamp mill on good ore.

Jenny Lind Gold Mining Company.—This company has secured 80 acres of the I. L. Weed Ranch on Alta Hill, including all the water rights, ditches and mining rights to the land. The company now has 6,500 ft. on the trend of the ledge.

Shasta County.

(From Our Special Correspondent.)

Gladstone.—This old mine 5 miles northeast from French Gulch is successfully worked by Jillson & Company. The shaft has been sunk 200 ft. deeper and an extensive ore body, averaging over 4 ft. wide and milling about $20 per ton, has been developed.

Mountain Copper Company.—According to a local paper, the smelting plant at Keswick is to be supplied with electric power by the Keswick Electric Power Company, which is installing a plant on Mill Seat Creek, 40 miles southeast of Redding.

Sierra County.

(From Our Special Correspondent.)

Forest Queen.—This mine at the mouth of Slug Canyon, owned by William York, has been sold to J. W. Finney, who will equip and develop the property.

Sierra Electric Company.—This company has been incorporated with a capital stock of $25,000 and the following officers and directors will serve for the first year: W. W. Mather, H. B. Budd, R. C. Walrath, W. W. Waggoner and F. Searls. An electric plant is to be erected on Middle Yuba River, to furnish power and light to mines at Alleghany.

Siskiyou County.

(From Our Special Correspondent.)

Dewey.—The mill at this mine in the Gazelle District is running day and night, and a large force of men is working in the stopes. The iron pipe to be put in to ventilate the mine is on the ground.

Trinity County.

(From Our Special Correspondent.)

Sweepstake.—Surveys for the ditch from Grizzly and Canon Creeks to this gravel mine on Oregon Mountain about 5 miles from Weaverville, a distance of about 25 miles, have been completed, and work will probably start on the ditch very soon.

Texas Jack.—This mine on the south fork of Indian Creek is considered a promising property. The owner, T. F. Edmunds, recently brought out a $1,500 bar of gold which represented a 30-day cleanup. A tunnel is being driven on a 12-in. vein. A 3-stamp mill is on the property.

Tuolumne County.

(From Our Special Correspondent.)

Bonanza.—This old mine on Piety Hill has been pumped out and active work started. M. D. Kelley is manager.

Driesam.—The Yellow Jacket Vein on this property at Arrastraville has been uncovered and is said to be very rich in gold. This shoot of ore was cut on the 200-ft. The shaft was sunk to the 400-ft. and a drift run north 267 ft.

Dutch.—On the 1,100-ft. level of this mine at Quartz Mountain a fine body of ore, over 20 ft. wide, has been developed.

Hope.—A new ore shoot 200 ft. in length and 4 ft. wide has been opened up on this property on the Bonanza lead just east of Sonora. The mine is worked through a tunnel, from which stoping is in progress. Five men are employed and the 10-stamp mill is crushing steadily. Boston people are interested.

Jumper.—The shaft in this mine is down 1,500 ft., and stoping is in progress from the 700-ft. level upward. The ore shoot is said to be over 800 ft. long, assaying about $15 per ton in free gold, the sulphurets being too low grade to save. The mines are located on the south end of Golden Hills, near Stent.

Longfellow.—This mine at Big Oak Flat is still being worked by A. P. Dron, the superintendent. The ore is low grade at present, and the future of the property will depend on exploration work. The mill is running.

Mack.—C. L. Lang, superintendent at this mine at Big Oak Flat, has 14 men at work grading the ground for mill, hoists, roads, etc.

COLORADO.

Boulder County.

Northern Coal and Coke Company.—The strike at this company's lignite mines at Erie, Louisville and Lafayette, has been declared off, and between 350 and 400 miners have returned to work. The strike started on September 28th last over a dispute regarding the rate of wages. Representatives of the United Mine Workers took a prominent part in holding the men in line during the strike. The strike was settled on a basis of a 10% advance in the wages of the men and a reduction of 50c. to $3 a keg in the price of powder. This the men must buy from the company. If the men have steady work it will take them until September, 1904, to make up from the advanced wages all the money lost in wages during the strike. The company's mines have been kept in good order. The company did not recognize the United Mine Workers in the settlement.

Dolores County.

Atlantic Cable,—At this mine at Rico there is reported opened at less than 100 ft. from the surface a mass of zinc and lead ore carrying small values in silver and gold, and a little iron and copper. A 15-ton mill is steadily at work producing a zinc and a lead product, both of which are marketable. The mill is to be enlarged to 100 tons capacity and magnetic separators put in. The ore mass is said to have already shown a width of more than 60 ft. and a length of 240 ft., while its depth is undetermined.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—D. C. Eu Earl to J. M. Taylor et al., the Homestake Lode in Independent District; C. F. McNerney to Bullion Mining, Milling and Development Company, the Profit, Loss and Commission Lodes in Pine District; W. C. Stevens to Little Jane Gold Mining Company, lease and bond in sum of $9,000 on Memphis Lode in Quartz Valley District; J. Flynn to J. R. Quigley, the Lake View Lode in Gregory District; J. W. D. Deane to Lillian Mining Company, the Lillian No. 3 Lode in Russell District; E. J. Adams to Bullion Company, the Bullion group of 10 claims in Pine District; F. I. Smith to W. H. Merritt, ¼ interest in Kansas Site and Kansas Extension Lodes in Nevada and Central City Districts; E. H. Lunken to Little Jane Gold Mining Company, the Edith Lode, and Belvidere Mining Company to above company the Morris, Old Glory, Arthur and Peggy Lodes in Quartz Valley District; J. E. Lightburn et al. to Quartz Hill Gold Mining Company, portion of Simmons, Stark County and Gibson Lodes in Gregory and Illinois Central Districts; H. L. Morris to B. F. Wilson, ⅜ interest in Chester Lode in Gregory District; R. W. Mather to A. Mackay, ⅛ interest in Annie Lee Lode in Lincoln District; J. Visintin to P. Couter, 1/6 interest in Mountain Club, Mountain and Plain Lodes in Quartz Valley Districts; J. Hunt to L. C. Albertson, ¼ interest Osborn Lode in Gregory district.

Avon Mining Company.—This company is erecting a new mill in Nevada Gulch to treat ores from the Climax. McFarlane & Company have the contract. The mill will be 30 by 68 ft. and be equipped with 30 rapid drop stamps, each weighing 700 lbs. and dropping 70 times a minute. The mill will be connected with the mine by aerial tramway and below the plates will be equipped with cast iron concentrating tables and a Wilfley table.

Boodle.—Central City men have opened a rich vein in the 200 west level, the rich ore assaying 12,762 oz. silver, or $7,657 per ton. The trial lot at sampling works gave values of 8,381 oz., or $5,028 per ton. The property is owned by H. J. Hawley et al., and is worked under lease and bond. Fred. Neumeyer, Central City, is manager.

Carr Mine and Colorado Company, Limited.—Manager Steve Hoskin has given the contract for the aerial tramway from the Carr Mine to Randolph Mill to A. Leschen & Sons Rope Company, of St. Louis. It is to be a Finlayson tramway over 6,200 ft. long and is expected to deliver 40 to 50 tons every 10 hours at a cost of from 4 to 5c. per ton. Construction will begin at once. Antwerp and London parties are interested.

Gilpin Ore Shipments.—The shipments for April of smelting and crude ores, tailings and concentrates from the Black Hawk depot of the Colorado & Southern Railroad were 257 cars, or 4,755 tons, an increase of 71 cars, or 1,315 tons.

Katie Francis.—Pennsylvania parties are interested and are putting up a shaft building.

Kokomo-Pioneer Mining and Milling Company.—It is reported that Boston men who are interested will soon pay off all indebtedness and arrange for early resumption. The Kokomo property is in this county, while the Pioneer is at Dumont in Clear Creek County.

Mechanics.—Denver owners are getting ready to start up.

Patch Mining Company.—A gasoline engine has been installed at the 1,400-ft. level for operating the blower. Unwatering has been delayed on account of the timbers below the 2,000-ft. level having filled in the shaft. Manager McCann is building dams at 2,000 ft. level to hold back the surface water.

Lake County—Leadville.

(From Our Special Correspondent.)

Leadville Output.—The output for April is a little over 700,000 tons, a falling off from March due principally to bad roads, making it next to impossible for ore to be hauled from mines not connected with the railroads.

A. M. W.-Midas.—During April this company shipped 113,000 tons of oxidized iron and sulphide ore and over 1,000 tons of concentrates.

Butcher Boy.—Operations on this Bald Mountain property are being pushed. After passing through 70 ft. of dolomite drifting has shown some fine-looking contact.

California Gulch and Valentine.—Both of these companies may suspend work owing to lack of funds. So far $60,000 has been spent on the California Gulch and about $70,000 on the Valentine, yet both companies have been unsuccessful in locating mineral. The Valentine has already closed down and unless money is forthcoming soon the California Gulch will also close. In this property small pockets and veins of silver ore have been cut.

Cloud City Mining Company.—Excellent work has been done on the shaft; the required 500 ft. were sunk in exactly 81 days. The hole was 4½ by 14 instead of 4½ by 9 ft., the usual size of shafts in this camp. The bottom is in lime and sinking will be resumed for another 100 or 150 ft.

Coronado.—Work is resumed on the 650-ft. levels after about 2 months' idleness. The big pumps soon lowered the water.

Diamond.—After cutting the station at the 800-ft. level sinking has been resumed.

Hagerman Shaft.—At a depth of 200 ft. some very good iron and high grade lead is reported. Several tons have already been taken out.

Josie.—A small streak of lead ore was cut in the east drift 400 ft. deep and assays show $30 to the ton. This discovery is the first tangible result since active developments started 6 months ago, and work will be rapidly pushed. Senator Clark, of Montana, is interested in the Josie.

New Leadville Home Mining Company.—The directors have published a statement showing that ore amounting to $48,351 was shipped in April; the operating expenses were $21,584, leaving a balance of $26,767; $2,000 in the operating expenses is incident to the reorganization of the company.

Sedalia.—Assays of the ore recently encountered in this mine near the Resurrection No. 1 shows over 2 oz. gold, 15% lead and 20 oz. silver. A considerable body of this is shown in late developments.

South Winnie.—The smelter returns from a 45-ton lot shows: gold, 3.2 oz.; silver, 21 oz.;

lead, 23%; copper, 2%; excess silica, 12%. The low grade netted $15.20 per ton.

Zinc Mining.—In the Adams alone 75,000 tons of zinc ore are reported in sight. This entire mass will be handled by the A. M. W. Mill. The Moyer has resumed shipments of this material.

Routt County.

Kansas City Copper Mining and Smelting Company.—This company, the successor of the Bromide Mining and Milling Company, states that it is starting work at both mine and smelter and expects to ship matte by June 1st. The company's mines are located at Oneco, in the northeast corner of the county, 30 miles from both the Utah and Wyoming State lines. The company's headquarters are in Denver, J. K. Burnham is president, A. H. Munger vice-president, and Rice R. Miner secretary and treasurer.

San Juan County.

Silver Lake.—The new mill at Silverton is a large structure covering more than two acres of ground, and is equipped with the most modern appliances for handling the ores. Electricity is used as the motive power. Three motors have been installed of 200 H. P. in the aggregate. Five hundred incandescent lamps will furnish the light. The great ore bin has a capacity of 2,500 tons. S. I. Hallett has taken charge as manager. E. G. Stoiber, the former owner, who planned the structure and its equipment, will, it is said, visit Europe and afterward reside in Denver.

San Miguel County.

Shipments of concentrates from the Telluride station for April were 153 cars, an increase of 17 cars over the shipments for April, 1900.

Alta Mines Company.—This company took over the Alta group May 1st, making a cash payment of $50,000 on the purchase price of $125,000. A. S. Koch is resident manager. The selling owners, N. T. Mansfield, J. L. Brown, W. E. Wheeler, A. J. Clark and F. W. Graham, paid $65,000 for the property. Under its former ownership the mine paid a handsome profit, with practically no stoping being done. The vein is a strong fissure, yielding 1 ton of first-class to 6 tons of milling ore. The smelter returns on first-class have varied from $93 to $110 per ton. The second-class yields 1 ton of concentrates from 6 tons of crude ore, the concentrates being worth $45 per ton. The purchasers are heavily interested in the San Juan Gold Mining Company, which owns adjoining property, and on this was built last year a 200-ton mill, which, after receiving the necessary equipment, will be run on the Alta output. Tunnel and tramway connection are already available.

San Miguel Mining and Development Company.—This company, capitalized at $1,500,000, is a new organization composed of St. Louis men, who propose extensive work in Bridal Veil Basin, where they have taken over a group of 25 gold-bearing lode claims. St. Louis men have been examining the property. A large force of men will be at work as soon as the trails are open.

Smuggler-Union.—This property indefinitely closed May 1st because of a strike ordered by the Miners' Union. This breaks the harmony of over 20 years' duration between the mine owners of San Miguel County and their employees. The disagreement has developed from the contract system of breaking ore adopted by the company for good and sufficient reasons. The union objected to it and the strike followed, making 400 men idle. The company had begun work on a 400-ton cyanide plant and on the enlargement of one of its 60-stamp mills to 100 stamps. These improvements will be completed. The Smuggler-Union is the largest producing property in the country. There is no reason to believe other properties will close.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Acacia Gold Mining Company.—Quite a bit of ore is being shipped from the Burns Claim by several lessees who are working on the old Brady block. Wrockloff is also shipping some good ore from his lease on the north end. Some work is being done on the Morning Star Claim. The company now is doing no work at all.

Doctor-Jack Pot Mining Company.—The directors have declared the regular monthly dividend of 1c. per share. The mine is reported as having shipped between $100,000 and $125,000 during April. There is now about $240,000 in the treasury and considerable ore unsettled for, part of which is very rich. The principal development work is on the 5th level of the Morning Glory shaft, which is the same as the 14th level of the Doctor. Winzes on this level show good ore.

Eclipse Consolidated Gold Mining Company.—A very good strike has apparently been made. A number of sacks of very rich ore taken out the past week have been deposited in a vault for safe keeping. The mine is situated in Eclipse Gulch and was one of the first shippers in the district.

Elkton Consolidated Gold Mining Company.—Additional pumps have been installed and are now working on the water. This, of course, hinders production, as a large amount of steam is required to work the pumps. It is understood that the development work is going on just the same where the water will allow.

Mary McKinney Mining Company.—The output for April is given as 1,950 tons, worth about $40 per ton, making a gross value of about $78,000. Some of the ore is being taken from the 5th level which was only recently unwatered. This is one of the big mines of the district and is credited with having the longest ore shoot. Geo. Keener has charge.

CONNECTICUT.

Hartford County.

Newgate.—It is stated that no effort will be made to reopen this old copper mine near East Granby. The Lenox Mining Company, of Boston, had arranged for a 50-years' lease of surface rights and had put in a hoist and some machinery. It is said the company stopped work because of doubt as to the validity of its mining rights. The mine was first opened in 1707, and was worked at intervals down to 1859. From 1773 to 1827 it was used as a prison.

GEORGIA.

Lumpkin County.

Dahlonega Consolidated Gold Mining Company.—At the annual meeting in Toledo, O., May 1st, the following directors were elected: J. W. Adams, Chattanooga; George H. Breyman, F. G. Thompson, J. M. Bloomer, F. W. Bainbridge and J. P. Coates, of Toledo; L. Siebert, W. M. Fisher and E. A. Cole, of Columbus; J. G. Rosenthal, Frank Adams, of Delaware; Mark Hopkins, E. C. Recor, of St. Clair, Mich.; Daniel C. Shaw, Charles McCulloch, of Fort Wayne; R. C. Thompson, Dahlonega; N. A. Hadden, Catawba Island. The board of directors met subsequently and elected the following officers: President, J. W. Adams, Chattanooga, Tenn.; vice-president, George H. Breyman, Toledo; treasurer, F. W. Bainbridge, Toledo; secretary, R. C. Thompson, Dahlonega; executive committee, J. W. Adams, George H. Breyman, Mark Hopkins, E. C. Recor and J. M. Bloomer; finance committee, George H. Breyman, J. P. Coates and William M. Fisher. Over $4,500,000 of the stock was represented. The report of progress at the mines for the past year was stated to be satisfactory, and the company was said to be in good financial condition.

IDAHO.

Owyhee County.

Trade Dollar Consolidated Mining Company.—Electric power from the company's new plant at Swan Falls is in use at the Blaine Mill and the Black Jack Mill at Silver City, 28 miles away, and also in the Florida Tunnel. This is now in 4,000 ft. and is to be driven 17,000 ft. An electric locomotive is to be put in for hauling mine cars. The main working station at the Black Jack shaft will soon be supplied with electric power. This station has been cut out of the solid granite, 1,200 ft. vertically from the top of the mountain and over 2,000 ft. from the mouth of the Idaho Tunnel, which connects it with the surface near the Black Jack Mill. This station will contain a 100-H.-P. motor, a large duplex air compressor, hoisting engine, pumps, etc. The motor will drive the compressor, which in turn will furnish power to the machine drills, hoisting engines and pumps. The company will put in a couple of electric drills for trial. This station and the Idaho Tunnel leading to it is now lighted by electricity.

MICHIGAN.

Copper—Houghton County.

Champion Copper Company.—At the adjourned annual meeting in Boston the following were elected directors: William A. Paine, S. L. Smith, Charles H. Paine, A. G. Stanwood, J. Malcom Forbes, George P. Gardner and Richard Olney. The last five are new directors.

Isle Royale.—It is expected that the new stamp mill will go into commission about May 8th. The work of filling the rock bins, which have a capacity of 2,000 tons, has begun. The big Nordberg pump has been tested several times, as has also the engines and other machinery. The mine has 5 miles of opening.

Quincy.—The April output of mineral is stated at 1,049 tons.

Wolverine.—The April output of mineral was 250 1-5 tons, and for the 4 months 977 4-5 tons. This compares with 231 and 892½ tons, respectively, in 1900. The No. 3 shaft is down to the 1,900-ft. level, and No. 4 shaft, 1,385 ft. distant, is down to the 16th level. No stoping has been done below the 12th level.

(From Our Special Correspondent.)

Atlantic.—The April output was 263 3/5 tons of mineral. A contract for the construction of a waste way, 600 ft. long and 50 ft. wide at dam narrowing to 30 ft., with a depth of 4 ft., at the Redridge Dam, has been let. About 275,000 ft. of timber will be used in the construction.

Baltic.—The new mill will commence stamping September 15th. The last of a lot of 50 new jigs from Cleaves' foundry have arrived and are being placed.

Calumet & Hecla.—Five cars of machinery containing a dial plate and 4 segments of the drum for the "Oswego" engine were injured in a railroad wreck while in transit and will probably be sent east for repair. Work on the timber mill erected at the head of Torch Lake is nearly finished. The mill is 54 ft. wide, 150 ft. long and 40 ft. high, and will be in operation in a month.

Osceola Consolidated.—The new stamp mill is well under way. At No. 3 shaft on the Kearsarge amygdaloid a Nordberg double hoist capable of carrying 6,000 ft. of cable is being put up. Four boilers are being placed in the new boiler house.

Tamarack.—Hoisting at the new No. 5 shaft has been interrupted because of the erection of the new steel shaft and rock house. Stephen Martin, formerly of No. 3, has charge of all surface work at this shaft.

Copper—Keweenaw County.

(From Our Special Correspondent.)

Allouez.—Twenty-six tons of copper have been shipped to the Dollar Bay smelters. Good rock is reported encountered in the shaft on the Osceola amygdaloid and options on the adjoining lands have been obtained.

Arnold.—The work of cleaning out the old Copper Falls tunnel is under way.

Clark.—A crew of men is stripping this old manganese property of all the machinery. It will be used at the Champion Mine.

Mohawk.—There are 150 bbls. of Mohawkite at the mine awaiting shipment and 6 men are engaged in sorting and barrelling the ore as it is hoisted.

Copper—Ontonagon County.

Lake Superior & Western Development Company.—At a recent meeting held at Calumet, Charles Briggs, James Milligan, James Hoatson, J. H. Lathrope, Gorden R. Campbell, Norman McDonald, John H. Holman and Thomas Hoatson, Jr., of Calumet, and George E. Tenor, of Pittsburg, were elected directors. The sale to the Calumet & Arizona Mining Company, of several of the mines of the company was confirmed.

Michigan Copper Mining Company.—At the recent annual meeting of the stockholders the following directors were elected: John Stanton, chairman; Joseph E. Gay, J. Wheeler Hardley, J. R. Stanton and Alfred M. Low. It was voted to continue unwatering the mine, but no change of policy was considered.

Norwich.—Alfred Meads, of Marquette, has sold this mine to a syndicate composed of New York and Chicago men. The mine was sold to Mr. Meads and 4 New York men years ago. They organized the Essex Copper Company in 1850, which now gives deeds to the new purchasers. The Essex Company stopped work in 1858. From that time until 1863 the property was worked by tributers.

(From Our Special Correspondent.)

Belt.—In spite of the recent failure to float this property another attempt is being made.

Mass Consolidated.—This company has contracted with M. J. Peppard & Company, of Minneapolis, for the construction of an approach to the mill.

Iron—Gogebic Range.

Anvil.—The Schlesinger interests are working 200 men at this mine, which has been idle for 12 years. Every mine at Wakefield is busy, something that has not happened before in years. The Chicago, Alpha and Comet are hard at work, and the Brotherton and Sunday Lake are mining heavily.

Tilden.—The new shaft is ready and will employ 200 men. No. 10 shaft is working heavily.

Iron—Marquette Range.

There is more ore in stock at Ishpeming mines than ever before. Besides the big mines, East New York and Winthrop piles have large stock piles.

Barasa.—An option on this mine, Negaunee, was recently taken by the Oliver branch of the United States Steel.

Cascade.—This mine at Palmer has resumed. Arrangements are about completed for resumption at the Imperial, Webster and Bristol mines, at Michigamme, 2 of which were operated by the Cleveland-Cliffs Company last year.

Cleveland-Cliffs.—Five drills are in operation at this company's explorations at Negaunee.

Iron—Menominee Range.

Aragon.—The sale of this mine at Norway to the United States Steel Corporation for $2,500,000 has been practically closed. This mine is one of the best in the Lake Superior region, producing some high-grade bessemer ore. It was formerly owned by the late Angus Smith, of Milwaukee, and is now the property of the Aragon

Mining Company, composed of men who were interested in Federal Steel.

Riverton.—In order to work this mine at Stambaugh without danger of the ground caving sufficiently to let a heavy flow of water into the workings, the course of the Iron River will be changed. Several plans have been proposed, but all will mean considerable expense, and the final course of the new channel is not determined yet.

MINNESOTA.

(From Our Special Correspondent.)

No boats are expected from lower lake ports for some time. The Pittsburg Steamship Company, which is the organization controlling the United States Steel ships, has taken general offices in Duluth. General Manager A. B. Wolvin and Assistant General Manager A. L. Harvey will be located there, and assistant general manager for the Eastern end, Mr. E. S. Mill, will remain in Cleveland, where he will be assisted by Mr. McGean, late with the Rockefeller fleet. The company expect to move down lakes not less than 10,000,000 tons of ore in its own 112 ships, and it has contracted for nearly 3,000,000 more from Pickands, Mather & Company, J. C. Gilchrist, Jas. Corrigan and others at 80c. from the head of Lake Superior, 70c. from Marquette and 60c. from Escanaba. This will comprise about the total tonnage to be moved by the steel corporation this year, and will be chiefly for its own furnaces. The business therefore must proceed at a rapid rate for the most part of the season. The managers of this traffic will have an opportunity to make a record this year.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Mr. Kidder, agent of the Pittsburg & Lake Angeline Mining Company (Jones & Laughlins) has been on the Mesabi starting work at the company's new properties. The Columbia shaft at Virginia will mine some ore this year. The Lincoln will be opened and will ship next year, while the Itasca will be developed soon. The company is also taking some other properties on the Mesabi and will explore them later.

Adams Iron Company.—There are nearly 500,000 tons of ore on stocked surface and the mine will make a heavier shipment this year than ever before. It is working all the shafts but No. 5. The Eveleth offices of the mine have been moved to the Spruce, which is also managed by Capt. J. H. Harding, of the Adams. No. 2 shaft of the Spruce has resumed work.

Biwabik Mining Company.—Two new shovels have just been received. A large Prescott pump will be installed at once, probably in the Cincinnati shaft. The mine has begun shipping in a small way and will be very busy all summer. The new Gates crusher is not yet in place. About 450 men are now employed.

Fayal Iron Company.—This company is employing about 1,000 men. The payroll of the 3 mines at Eveleth—Fayal, Adams and Spruce—is about $80,000 per month.

Sharon Ore Company.—At this new mine a pit 250 by 350 ft. is down some 35 ft. and within 12 to 15 ft. of the ore. A heavy quicksand has made trouble, and shipments cannot commence for some time. The shaft is down and drifts are run under the stripping.

Iron—Vermillion Range.

(From Our Special Correspondent.)

Minnesota Iron Company.—This company has started a diamond drill in the big cut on the wagon road to Soudan, near where it was drilling a year ago. This makes 8 drills the company is working on the hill north of Tower, where they have so many years sought ore.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Clear Jack.—This mine at Neck City, of which, Frank O. Chesney, of Kansas City, is one of the principal owners, last week, with only single shifts working, turned in 2½ cars of ore, which brought the highest price. Mr. Chesney also owns the fee of 10 acres adjoining on which good ore has been shown with a drill.

Connecticut Zinc and Lead Company.—An application has been made to the judge of the circuit of Jasper County at Carthage for a receiver for this company owning and operating mines on the Granby land at Joplin and elsewhere in the district. The application was made by Harry Tamblyn, a Joplin creditor.

Eagle.—This mine on the Arkansas lease at Belleville has been attached by local creditors for accounts aggregating about $1,000. The attachments, which were levied as the result of a disagreement, will probably be withdrawn later and the suits settled out of court.

East Sherwood Lead and Zinc Company.—This company has purchased of Rudolph Hatfield, of Wichita, Kan., the 40-acre tract 2 miles south of Carl Junction, on which their mines are situated, for $50,000.

International Zinc Company.—The Blue Wing mine, mill and lease of the International Zinc Company, Limited, at Carterville, were to be sold at public auction by Receiver Trimble on Monday, May 6th, to the highest bidder for cash.

Joplin Ore Market.—The demand for zinc ore last week was enormous. Every available car that the railroads could furnish was used and the last of the week's output was not loaded until late Saturday night. The ore buyers cut the price on the very finest grades 50c. per ton but everything below 60% ore was advanced and every pound that was for sale was purchased and shipped. The Morning Star ore on the Granby land at Oronogo sold for $28.50 per ton and several small lots sold at $29, including the ore from the new Cyclone Mine on the John Jackson land at Joplin. Any quantity of ore at Joplin sold at $28 and the entire output at Neck City went at $28.50. There was no change in the price of lead, which sold at $22.75 per 1,000 lbs. all the week. Following is the turn-in by camps of the Joplin District for the week ending May 4th.

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	3,305,700	312,000	$53,378
Carterville	2,688,650	377,910	43,455
Webb City	785,650	121,020	12,544
Oronogo	590,670	18,530	8,000
Aurora	765,680	26,650	10,590
Zincite	240,090	4,530	3,464
Galena-Empire	2,198,420	209,020	31,136
Neck City	216,000	.....	3,132
Granby	454,000	26,000	4,770
Carl Junction	346,890	.....	4,602
Spurgeon	273,010	54,580	4,504
Sherwood	224,440	.....	3,142
Central City	202,040	15,960	2,986
Roaring Springs	249,670	4,590	2,693
Peacock City	135,700	33,340	2,454
Cave Springs	82,470	.....	1,113
Carthage	85,960	.....	1,203
Duenweg	.....	86,270	1,941
Springfield	55,000	.....	770
Seneca	11,740	16,600	447
Ash Grove	.....	30,000	675
District total	12,911,780	1,337,000	$196,999
Total 18 weeks	182,094,760	22,738,670	$2,709,899

Zinc value for week, $166,775; lead, $30,224; zinc value 18 weeks, $2,191,461; lead, $516,438.

During the corresponding week last year top grade zinc ore sold at $31.50 per ton and lead at $27 per 1,000 lbs. The lead sales were greater than last week by 77,840 lbs., the zinc sales less by 3,347,100 lbs., and the value less by $22,967. For the first 18 weeks last year the sales were less by 9,083,960 lbs. of zinc and 2,232,090 lbs. of lead, but the value was greater by $478,619. Compared with the previous week, the sales were greater by 3,328,550 lbs. of zinc and 95,420 lbs. of lead and the value was greater by $48,691.

Roesch.—Stevens Brothers, of Galena, have sold their 40-acre tract at Peacock Valley, known as the Roesch Land, to Eastern parties for $36,000.

MONTANA.

Fergus County.

Central Montana Mines Company.—This company's cyanide plant in Whiskey Gulch, in the Judith Range, has been running at less than half its capacity for the past 2 months owing to the shortage of the water supply. As soon as the company is able to increase the supply of water the mill will resume the full run of 220 tons per day.

Fergus County Business Men's Association.—This association, recently formed at Lewistown, aims to advance the mining and agricultural interests of the county. It will endeavor to secure and put in print the latest news of mining developments, etc. The officers are: President, F. E. Wright; vice-president, W. D. Symmes; secretary, David Hilger; treasurer, J. M. Vrooman; executive committee, the above and I. M. Hobensack, G. J. Weideman, G. J. Bach, L. W. Eldridge and Halsey R. Watson.

Great Northern Mining and Development Company.—This company is working the Chickadee Group at Gilt Edge. It has a large cyanide plant on its properties. The mill has already worked more than 100,000 tons of ore.

Kendall.—Finch & Campbell, of Spokane, who had a bond on this group, in the North Moccasin Mountains, have completed a deal with Oscar Stephens to secure control of the water power of Warm Spring Creek. Mr. Stephens has filed a claim to 4,000 miner's inches, which he will lease to the mining firm for a term of 5 years, and which they reserve the right to renew for a like period at the expiration of that time. A pumping plant will be installed at once and a part of the water will be used in the cyanide plant. It is said to be assured that this company will erect an electric plant to generate power for their own mill, and to furnish both water and power for other cyanide plants now in course of construction throughout the North Moccasin Mountains.

New Year Gold Mines Company.—This company, at New Year, is preparing to put in operation a bucket tramway from its mines to the mill, about 1 mile distant. This company has some extensive bodies of low-grade cyanide ores exposed, but the cost of conveying the ore from the mine to mill by wagon transportation makes working prohibitive. The development tunnel is now in the hill more than 1,000 ft., and the lime-porphyry contact has been reached. Drifting along the contact is being prosecuted steadily.

Lewis & Clarke County.

(From Our Special Correspondent.)

American Smelting and Refining Company.—The East Helena plant has closed down owing to labor troubles through the operation of the 8-hour law and 700 men are idle. Several mills and mines have had to close in consequence, fully 15,000 people throughout the State will be directly affected.

Peck-Montana Concentrator.—This mill has closed owing to the shutdown of the smelter.

Silver Bow County.

The Butte Miners' Union recently decided to invest $50,000 of its surplus in the stock of the Amalgamated Copper Company. According to a local paper the union was to get in at the rate of $100 per share. Subsequent reports state that the union may recede from its decision.

Amalgamated Copper Company.—At a hearing in Jersey City, N. J., on the motion to show cause why this company should not be enjoined from absorbing the Boston & Montana and Butte & Boston mining companies of Montana, little evidence was brought out. Statements were presented that a purchase price of $56,250,000 for Boston & Montana and $18,500,000 for Butte & Boston were not excessive. Vice-Chancellor Pitney refused to make the injunction permanent and also refused a request to postpone the case in order that the plaintiff might secure additional affidavits.

Copper Trust.—Judge Clancy recently overruled the motion to dismiss an order to show cause in the Copper Trust case and set for hearing on May 9th the petition for permission to examine and survey the mines of the Anaconda Company. On the motion to dismiss the order to show cause, the whole merit of the case and the right to make the Copper Trust location on the Anaconda properties was gone into.

NEVADA.

Esmeralda County.

(From Our Special Correspondent.)

Hawthorne Gold Mining Company.—This company has been organized with a capital stock of $300,000, to develop the Mascot and other mines in Hawthorne District. The directors are G. D. Burton, president; W. S. Steel, vice-president; F. B. Cox, treasurer, and S. M. Summerfield, general manager.

Tonapah District.—This new camp is about 147 miles north and east of Randsburg, Cal., and about 125 miles south of Austin. It lies in the foothills of the San Antonio Range, at an altitude of some 7,000 ft. above sea-level. The nearest water is said to be 3 miles away and not very abundant. No wood suitable for making steam is found within 15 miles. Some very rich ore, however, is reported found and the camp is booming. Two main ledges have been located. The Sodaville is the nearest postoffice.

The camp is in a porphyry belt in the low foothills on the western slope of the San Antane range, and to the east of Lone Mountain. It was discovered in the fall of 1900. The ledges run east and west. The ledges, capped by black croppings, easily discernible at a distance of 10 miles, are in the great desert of Nevada. The old forty-niners, journeying to California, passed these croppings, and even camped temporarily on them, but apparently none even took a sample. The ore assays high in silver and gold. It is in mineralized porphyry, and the veins are from 1 to 4 ft. wide. On the west side of the belt is a good deal of shale, and on the east it is capped with rhyolite or trachyte. One vein that appears to be more of a main lead than the others is said to show high-grade ore 3 or 4 ft. wide to a depth of 40 ft. The ore is hard, dark-colored and brown quartz, sometimes showing pure gold and much horn or native silver. In some cases the ore is not unlike the surface ores of Cripple Creek. All the ore is hauled to Sodaville, 60 miles, and thence shipped to San Francisco for treatment. Nothing less than $100 a ton is sent, as the cost of transportation is about $45 per ton. The Southern Pacific is considering the extension of its road from Sodaville to the new town. Application has been made for a post-office, and the name will be changed from Tonapah to Butler.

Storey County.

(From Our Special Correspondent.)

The mill at the mouth of the Sutro Tunnel, running steadily on ore from the waste dump worth less than $3 per ton, is a paying proposition.

White Pine County.

Wolframite Mining and Milling Company.—This company, with headquarters at Minneapolis, Minn., controls 23 claims near Osceola. The ore exposed is said to carry values per ton of $2.50 gold, $8.50 silver and $2 lead. Some of the veins carry considerable wolframite.

NEW JERSEY.

Warren County.

The Newton "New Jersey Herald" says that recently "two car-loads of soapstone were shipped over the Lehigh & Hudson. It was taken from the lowlands on the Crane Iron Company's property at the foot of Jenny Jump Mountain southwest of Johnsonsburg. The two car-loads were shipped away as a sample to test its quality and estimate its market value."

NEW MEXICO.

Santa Fe County.

Santa Fe Gold and Copper Mining Company.—This company's plant at San Pedro comprises a 125-ton furnace. The building, 120 by 35 ft., comprises an engine and a furnace room. The engine room is equipped with a 125-H.-P. Corliss engine, an Ingersoll-Sergeant 6-drill air compressor, a Rand 4-drill compressor, a Cochrane feed-water heater and purifier and automatic engine driving a 10-kw. dynamo for lighting the plant. The boiler house, 40 by 45 ft., contains 2 100-H.-P. boilers and one 80-H.-P. boiler. Water is supplied from the company's pumping station, 1½ miles distant, and is pumped up into 240,000-gal. tanks. The ore is brought from the shaft mouth to the smelter by 900 ft. incline with a difference of elevation of 180 ft. The ore treated is mostly sulphides, with a small amount of carbonates and oxides, and carries copper, gold and silver. The mine and mill now employ about 300 men and the furnace is running to nearly its full capacity. J. T. McLaughlin is superintendent.

PENNSYLVANIA.

Bituminous Coal.

(From Our Special Correspondent.)

H. C. Frick Coke Company.—The Connellsville region was much surprised and interested by the recent change of officials. George Lauder, James Gayley and Giles B. Bosworth have resigned as directors, and are succeeded by O. W. Kennedy, William C. Magee and Philip Keller. Bosworth will spend a year or more recuperating his health, he having been actively engaged with the company for 28 years, the longest term of any official in the company's employ. He was at the time of his resignation vice-president and treasurer. The office of vice-president was not filled, but Keller was made treasurer and W. S. Armstrong assistant treasurer. Kennedy, one of the new directors, is the active superintendent of the Frick coke interests in the Connellsville region, with his headquarters at Scottdale, in Westmoreland County, his title being general superintendent; the general manager of all the coal and coke interests of the United States Steel Corporation, of which the H. C. Frick Coke Company is part, is Thomas Lynch, of Pittsburg.

Notwithstanding the consolidation of the coal and coke interests in the Connellsville region, independent concerns are springing up to enter the market. A number of independent coal and coke operators have this week put under way in Western Pennsylvania, West Virginia and Ohio what is termed the Tri-State Coal and Coke Company, which has a capital stock of $100,000, nominally, and offices in the Lewis Block, Pittsburg. The company has purchased a number of coal and coke properties near Latrobe, just north of the Connellsville coking belt, and few of the plants along the Youghiogheny River, producing coal is just a little too hard for coking, but excellent for fuel. With these properties the new concern buys outright 250 coke ovens, and expects to market 1,000,000 tons of coal and coke a year. More ovens will be built, and work begun at once. The company has officers as follows: T. J. Easter, president; William Harris, vice-president; G. W. Eisenbeis, treasurer, and Roy Wise, secretary. The new company has also absorbed the brokerage business of T. J. Easter and of Humphreys, Stewart & Company, both of Pittsburg.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Grizzly Bear.—Preparations are under way to work this old property, which was operated a number of years by Robert Floorman, and was a good producer. The ore is free milling, but low grade.

Lawrence County.

(From Our Special Correspondent.)

Central City Cyanide Plant.—Railey & Berry have started the 20-ton cyanide plant at Central City on ore from the Cornucopia and Pay Streak mines in the Portland District. The plant was purchased from the Dakota Mining Company.

Crosby-Ehrich Syndicate.—W. F. Crosby, of the Crosby-Ehrich Syndicate, and F. H. Weeks, stockholders in the Belt Development Company, are at Lead. Their company has the bond on the property adjoining the Homestake on the south. A shaft is down 125 ft.

Little Blue.—This group on Yellow Creek, consisting of the Little Blue, Little Blue fraction, Pansy and Pansy fraction, has been sold to P. F. Balliet and John A. Sandholm and associates, of Des Moines, Ia., for $21,000. The owners were James Julius, Joseph B. Moore, of Lead, and J. P. Laffey, of Deadwood. A reduction plant is to be built.

Omaha Company.—This company is working again at Whitewood Falls, 6 miles below Deadwood. A placer is being opened up.

Sunset Mining Company.—This company has closed down its development work at the Sunset shaft in the Bald Mountain District. The shaft was sunk 250 ft. to quartzite and nearly 2,000 ft. of cross-cutting was done. Two ore zones were cut, but the values were too low to treat successfully. The Gordon-Tiger Mining Company has been organized by a majority of the stockholders of the Sunset Company to work a property at Twin Lakes, about 14 miles from Leadville, Colo. Prof. F. C. Smith, of Deadwood, is general manager of both companies.

TENNESSEE.

Polk County.

Tennessee Copper Company.—According to a local paper, this company is now working the Burra Burra and Polk County mines. These 2 mines produce about 700 tons of ore per day. The company will have the London mine in operation soon, which will produce 500 tons per day.

UTAH.

Juab County.

United States Mining Company.—At a meeting of the stockholders of the United States Mining Company at Portland, Me., on May 4th, it was voted to increase the capital stock of the company from $10,000,000 to $12,000,000 by the addition of 100,000 shares having a par value of $25 each.

(From Our Special Correspondent.)

Tintic District.—The shipments sent forward from the 3 rail points of this district for the week ending May 3d were 110 cars of ore, 2 cars concentrates and 1 bar bullion, the latter from the Mammoth Mill. Following are the contributors of ore: Centennial-Eureka, 45 cars; Bullion-Beck, 8; Gemini, 6; Yankee Consolidated, 1; Mammoth, 8; Grand Central, 20; Lower Mammoth, 6; Carissa, 6; Ajax, 3; Star Consolidated, 4; Tesora, 3; total, 110 cars.

Salt Lake County.

(From Our Special Correspondent.)

Dalton & Lark.—Friends of Willard F. Snyder have been congratulating him upon the sale of the Dalton & Lark and adjoining claims to the Bingham Copper and Gold Company. Mr. Snyder is associated with P. L. Kimberly, of Sharon, Pa., and the consideration is $1,250,000, of which $250,000 is cash and $1,000,000 stock in the newly organized Bingham Consolidated Mining and Smelting Company. This is the third deal Mr. Snyder has put through within the past 18 months.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Ben Hur.—Ore is being shipped to the Republic Power and Cyaniding Company's mill.

El Caliph.—The drift from the bottom of the 60-ft. shaft is in 10 ft., following 5 or 6 in. of quartz and gangue. Some of the ore is very rich and shows native gold. The lessees have shipped 10 tons of ore to the Granby Smelter, at Grand Forks, B. C. The tunnel is in 80 ft.

Flag Hill.—The water has been pumped out of the winze and a drift started on the vein from the bottom is in 15 ft. northeast. A drift on the adit level has followed this vein over 200 ft., the quartz averaging 5 ft. wide with good values.

Gold Ledge.—The tunnel is in 276 ft.

Lone Pine-Surprise.—The new tunnel is in about 100 ft. and may strike the Black Tail vein any day.

Morning Glory.—The upraise is within 35 ft. of the adit level. Another shipment of 20 tons of high-grade ore has gone to the Grandy Smelter.

Republic.—A drift has been run on rich ore 80 ft., between the 3d and 4th levels. The station at the winze on No. 4 level is 55 ft. long and from 12 to 30 ft. in height, 16 ft. wide at the bottom and 8 ft. at the top inside the timbers. Connected with the station is a 25-ton ore bin. The hoisting machinery for the winze is in transit. The winze is down 125 ft., with 2 4 by 4 ft. compartments, following the dip of the vein. At 100 ft. down the vein was crosscut 28 ft. and a drift runs south 180 ft. on a rich pay streak 4 or 5 ft. wide.

Republic Power and Cyaniding Company.—The mill is running on 150 tons of ore from the Republic Mine per day and giving satisfaction. The Griffin mills are doing good work. The mill is receiving custom ore.

Trade Dollar.—The shaft is down 68 ft.

FOREIGN MINING NEWS.

AFRICA.

Natal.

The Commissioner of Mines reports the total coal raised from Natal collieries in February at 47,271 tons. The coal exported was 4,194 tons, while 17,463 tons were sold for bunker or ship coal at Durban. The number of men employed in the coal mines was 145 whites, 1,720 negroes and 1,302 East Indians; a total of 3,167 persons.

Rhodesia.

The gold produced from Rhodesian mines in February is reported by the Chamber of Mines at 12,237 oz. crude. For the two months ending February 28th the total was 23,024 oz., against 11,475 oz. for the corresponding period in 1900. The production this year was equal to 18,880 oz. fine gold, or $390,250.

AUSTRALASIA.

New South Wales.

Broken Hill Proprietary Company.—This company reports that the output of the refinery for the four weeks ending April 24th included 423,093 oz. silver, 3,129 tons lead and 45 tons hard, or antimonial lead.

New Zealand.

The Mines Department states the exports of gold and silver for February and the two months ending February 28th as follows, in ounces:

	Gold.		Silver.	
	1900.	1901.	1900.	1901.
February	18,125	53,404	29,593	48,819
Two months	56,414	75,297	43,458	71,895

For the two months there was an increase of 18,883 oz. gold and of 28,437 oz. silver. The gold exported for the two months in 1901 was equal to 67,799 oz. fine gold, or $1,401,405.

Tasmania.

The Mines Department reports the mineral production as below for the three months ending December 31st:

		1899.	1900.	Changes.	
Gold won	Oz.	15,938	15,072	D.	866
Gold ore and pyrites, exported	Tons.	110	299	I.	189
Silver ore exported	"	2,272	4,463	I.	2,191
Blister copper exported	"	2,828	2,457	D.	371
Copper ore exported	"	20	4,041	I.	4,021
Iron ore exported	"	1,619	652	D.	967
Coal raised	"	11,899	12,357	I.	458
Silver-lead bullion exp	"	869	.....	D.	869
Tin ore exp	"	29	10	D.	19
Tin, metallic, exp	"	649	586	D.	63
Wolfram ore exp	"	99	4	D.	95
Asbestos exp	"	200	22	D.	178
Oxide mineral exp	"	6	5	D.	1

The total values for the quarter were £506,-122, against £482,566 in the corresponding quarter of 1899. Dividends paid by companies during the quarter were £51,027, of which gold mines paid £17,200; silver mines, £6,827, and tin mines £27,000. There were 7,086 men employed in mines during the quarter; of these 6,861 were white men and 225 Chinese.

Victoria.

The Mines Department reports the gold production in the month of February at 54,625 oz., of which 2,953 oz. was from alluvial or placer workings, and the balance from quartz mines. For the two months ending February 28th the total was 105,770 oz. gold, against 102,691 oz. in the corresponding months of 1900; showing an increase of 3,079 oz., or 3%, this year.

SOUTH AMERICA.

British Guiana.

The Mines Department reports that the production of gold in March, on which royalty was paid, reached a total of 7,738 oz. In March, 1900, the total was 9,305 oz., showing a decrease of 1,567 oz., or 16.8% this year.

COAL TRADE REVIEW.

New York. May 10,

Anthracite.

The anthracite trade is generally in good shape for this season of the year. The April output is officially estimated at 3,685,013 tons, about 400,000 tons more than in April, 1900, when, during the last week of the month, there was a heavy movement for shipment up the lakes. This year actual consumption was much heavier, as the movement of lake coal is just under way. The total tonnage for the first 4 months of this year is 17,931,732 tons.

The ice blockade in the St. Clair River is broken and vessels are making their way into Lake Michigan. A considerable fleet has loaded coal at Buffalo and is on its way to upper lake ports. There have been no arrivals at Lake Superior points yet and trade in hard coal in the Northwest is very light indeed. In Chicago territory business is quiet, with the market very firm. Receipts by rail are falling off with the opening of lake navigation. At the lower lake ports demand is fair. At Eastern and seaboard points demand is as good as can be expected in May. Prices are being firmly maintained and

the reports of coal being sold at April figures are probably baseless, at least they cannot be substantiated. Demand from points beyond Cape Cod is better than usual at this season.

The May prices for free-burning white ash coal f. o. b. New York are: Broken, $3.60; egg, $3.85; nut and stove, $4.10.

Bituminous.

The seaboard soft coal trade is still dull. A heavy tonnage of coal is being unloaded at points beyond Cape Cod and heavy stocks are in cars at the tidewater shipping ports awaiting vessels. Until vessels get back from the East this congestion at tidewater is not likely to be relieved.

The far East is sending in a fair amount of orders for shipment so soon as vessel supply will permit, but trade is quiet. Some coal is being taken along Long Island Sound, but the amount going forward is not up to what it should be. New York Harbor trade has fallen off a bit. All-rail tonnages are increasing.

Transportation from mines to tidewater is slow on account of the blockade at loading ports. The railroads are trying to get coal forward for shippers able to place tonnages and are succeeding fairly well. Car supply is embargoed to many shippers, but as soon as coal at tidewater is taken embargoes are released to the extent that the railroad thinks the particular concern can supply orders and secure vessels.

In the coastwise vessel market the lower ports are bare of vessels. Vessels are in demand and rates are firm. We quote coastwise freight rates from Philadelphia as follows: Providence, New Bedford and the Sound, 60@65c.; Boston, Salem and Portland, 70@75c.; Wareham and Lynn, 80c.; Portsmouth and Bath, 75@80c.; Newburyport, 85c.; Saco, 90c. and towages; Gardiner, 80c. and towages; Bangor, 95c.@$1. Rates from the further lower ports are 10c. above these figures.

Prices for the better grades of coal are generally firm, weakness being confined to certain of the poorer grades.

Birmingham, Ala. May 6.

(From Our Special Correspondent.)

The Alabama coal trade is falling off with warmer weather. The production is less and some of the larger mines are beginning to run slack time. The miners, though, are still making money, wages being high on account of the firm price of pig iron. Those in the employ of the Sloss-Sheffield Steel and Iron Company, 3,000 or 4,000 in number, have received notice of an advance of 2½c. per ton in the mining rate, making it 55c., the maximum price under the contract between the miners and the operators. The Tennessee Coal, Iron and Railroad Company did not advance wages. The deal whereby the Monongahela Coal and Coke Company, of Pennsylvania, becomes in possession of Alabama coal properties in Walker County along the Southern Railway is either consummated or nearly so. It is stated that the deal was not brought about to stamp out competition, but because the Pennsylvania desired to enhance their position. It is stated that just as soon as the cases in court can be settled, the receivers discharged and other legal hindrances terminated, the properties of the Corona Coal and Coke Company will be transferred to the Monongahela people. The properties of the Virginia-Alabama Coal and Coke Company and the Southern Coal Company, in Walker County, have been transferred. This will enable the Pennsylvanians to supply Mississippi and Louisiana and Texas purchasers. The Alabama mines will not be closed down.

Chicago. May 7.

(From Our Special Correspondent.)

Anthracite Coal.—The dealings in anthracite coal continue in small quantities, with quick delivery asked as usual. There is but small inquiry and prospects for any immediate betterment in this market are obscure. Sales are made for present requirements and the market is very dull. On May 1st there went into effect the new circular prices, an advance of 10c. per ton on anthracite coal, both wholesale and retail. There is now a discount of 40c. per ton from regular circular prices of $5.75 for broken and $6 for egg, stove and nut, the actual selling figures being $5.35 for broken and $5.60 for egg, stove and nut in car-loads, f. o. b. Chicago.

Bituminous Coal.—Small buying has characterized the market. There is but little new business and most of the coal being delivered is on old contracts. The warmer weather has influenced the situation. Inquiry is small and shippers do not look for any immediate increase in business.

Cleveland, O. May 8.

(From Our Special Correspondent.)

The sales agents who have just returned from the Northwest, where they have been placing Ohio, West Virginia and Pittsburg coals, announce that the dealers are a little more free about talking business than they were a short time ago. The upper lake docks are pretty well supplied with coal now, but the dealers are buying for next season's supply. The condition of the docks does not necessitate an immediate movement of any large block of coal. The sales that have been made have been mostly f. o. b. Lake Erie ports and the shippers have expressed their desire to deal personally with the lake vessel-owners this year. This signifies a tendency to ship the coal according to the wild rate rather than to take a block of tonnage to cover the entire movement. The shippers are firm in the belief that the surplus tonnage on the lakes will affect the rates so greatly as to cause a low carrying freight. The delay in the rivers and the prospective heavy movement of coal have striking tendencies in the opposite direction. The result of this feeling is that no big contracts have been placed yet. The wild rates are strong, being 40c. from all ports on the lower lakes to all receiving ports up above. This rate has been paid to Duluth for 10 days, but the Lake Michigan shippers have not been able to get tonnage. It might be said now, however, that the opening rate has been clearly established at 40c. to all ports in the upper lake region.

Pittsburg. May 8.

(From Our Special Correspondent.)

Coal.—Shipments to the southern ports have been suspended during the week, and an unusual number of empty coal boats and barges are in the pools and harbor. This insures steady employment for several months of all the river coal mines. The mines of the Pittsburg Coal Company are all in operation and shipments to Cleveland on Northwestern contracts are progressing favorably. No change in prices has been announced.

Connellsville Coke.—The production last week exceeded all previous records by nearly 1,000 tons and with continued strong demand there is little doubt but that this record will soon be broken. The production for the region was 237,101 tons. Of the 21,447 ovens in the region, 19,949 are active and 1,498 idle. There has been no change in prices, but an advance is likely to occur about July 1st. Furnace is quoted at $2 per ton and foundry at $2.50 per ton. The shipments for the week amounted to 10,537 cars, distributed as follows: Pittsburg and river tipples, 3,537; to points west of Pittsburg, 4,819; to points east of Connellsville, 2,181. This was a decrease of 633 cars over the shipments of the previous week.

San Francisco. May 4.

(From Our Special Correspondent.)

Coal receipts at San Francisco by water in April were the lightest in any month for a year past. For the four months ending April 30th the receipts are given below, the figures including no coal received from California mines nor from Utah and Wyoming by rail.

From:	Tons.
Eastern United States	4,221
Oregon	13,650
Washington	243,776
Total domestic	261,647
British Columbia	169,651
Australia	40,790
Great Britain	3,427
Total foreign	213,868
Total	475,515

The total reported last year for the corresponding period was 506,945 tons; showing a decrease of 31,460 tons, or 6.2%. Eastern and British coal especially show decreases. The comparatively small receipts have had no effect on prices, and it is evident that the use of fuel oil is beginning to show some effect on the coal trade.

Shanghai, China. April 3.

(Special Report of Wheelock & Co.)

Coal.—Regular deliveries to consumers only. Arrivals for the fortnight ended April 3d aggregated 20,511 tons. Quotations per ton are as follows: Welsh Cardiff, 22 taels ($14.75); Australian Wollongong, nominal, cargo, ex-godown, 12 taels ($8.04); and miscellaneous sorts, 6@7 taels ($4.02@$4.69); Chinese, Kaiping lump, 8@10 taels ($5.36@$6.70); dust, 6 taels ($4.02); and mixed 7@7.50 taels ($4.69@$5.03); Japan, all contracted for.

Kerosene Oil.—Not much doing. Prices at the Tea Shop are very steady at 1.92½ taels ($1.30) for Devoes, and 1.78½ taels ($1.20) for Russian. Importers of American quote 1.97 taels ($1.32), less 2%. Stocks are 245,200 cases Devoes, 480,450 cases Batum, and 77,200 cases Langkat; total, 802,850 cases.

Foreign Coal Markets. May 10.

The English coal market is in a disturbed condition over the new export tax and the possible general strike of miners. The House of Commons has voted in favor of the tax.

No new contracts are reported, but deliveries are going on steadily under existing contracts.

There has been more chartering of vessels to Mediterranean ports from Virginia, present freight rates being easier at 13s. @ 13s. 2d. ($3.12 @$3.16). A charter was also booked from Norfolk to Manila at $7, sailing in June, which is 75c. less than was reported in April. Further South American business has been done from Norfolk to Rio Janeiro at 16s. ($3.84), and from Baltimore to Pernambuco at 18s. 6d. ($4.44).

Messrs. Hull, Blyth & Company, of London and Cardiff, say, under date of April 27th, that coals all round are firm, and prices are nominally as follows: Best Welsh steam coal, $4.44@$4.56; seconds, $4.32; thirds, $4.08; dry coals, $3.96@$4.08; best Monmouthshire, $3.96@$4.08; seconds, $3.60@$3.84; best small steam coal, $2.52; seconds, $2.16; other sorts, $1.80.

The above prices for Cardiff coals are all f. o. b. Cardiff, Penarth or Barry, while those for Monmouthshire descriptions are f. o. b. Newport, exclusive of wharfage, and are for cash in 30 days, less 2½% discount.

Tonnage is plentiful and rates are easier. Some rates quoted from Cardiff are; Marseilles, $1.90; Genoa, $1.92; Naples, $1.92; Port Said, $2.04; Singapore, $3.60; St. Vincent, $1.86; Rio Janeiro, $3.48; Buenos Aires, $3.30.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 612.)

New York. May 10.

Heavy Chemicals.—Glass factories closing up have lessened alkali shipments. Otherwise heavy chemicals are in good request. Some export business is noted in soda ash for Australia. We quote per 100 lbs. as follows: Domestic soda ash in bulk is worth 2½c. per 100 lbs. less than quotations below:

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali, 58%.	80@85	....	85@87½
" 48%.	85@90	....	.....
Caustic Soda, high test....	$1.85@$1.90	.....	1.85@1.87½
powd., 60%	.....	2.75	.....
70@74%.	.....	2.85	.....
98%.	....	3 25	3.75@4.00
Sal Soda	50	60	67½
" conc.	1.25@1.50	....	1.75
Bicarb. Soda..	1.05@1.10	.....	1.37½@3.00
" " extra	3.25@3.50	.....	.....
Bleach Pdr., Eng. prime..	.....	....	2.00@2.10
other brands.	.....	....	1.90@1.95
Chl. Pot cryst	....	8.00@8.25	9.50@9.75
" powd.	....	8.25@8.50	9.75@10.00

Cyanide of Potassium.—Sales are reported in British markets at 9½@10d. (19@20c.) per lb., while in New York importers ask 24@25c.

Nitrate of Silver.—The higher bullion market strengthened nitrate of silver to 40c. per lb.

Bismuth Preparations.—Manufacturers have lowered quotations for subnitrate to $1.65 per lb., and subcarbonate, to $1.85, owing to easier raw material.

Acid.—Quiet. April's deliveries of sulphuric acid exceeded the previous month. Blue vitriol is weak, owing to freer offerings.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified

Acetic, No.8	$1.62½	Nitric, 36°	$3.87½
Blue Vitriol.	4.25@4.50	Nitric, 38°	4.12½
Aqua Fortis, 36°	3 62½	Nitric, 40°	4.37
Aqua Fortis, 38°	3 87½	Nitric, 42°	4.75
Aqua Fortis, 40°	4.12½	Oxalic	5.75@6.00
Aqua Fortis, 42°	4.50	Sulphuric, 66°	1.20
Muriatic, 18°.	1.20	Sulphuric, 60°	1.05
Muriatic, 20°.	1.35	" bulk 50° ton	14.00
Muriatic 22°.	1.50		

Brimstone.—The safe arrival of "Jupiter" with 5,000 tons has helped to weaken the market. Spot best unmixed are quoted at $21@$21.25 per ton, while shipments are held at $21.25@$21.50. Best thirds are worth $2 less. It is understood that importers find difficulty in selling even at these low prices, as consumers are well supplied and not anxious to contract ahead. The market in April showed lower prices than any month this year, being $21.78 per long ton for spot best unmixed seconds, and $21.19 for shipments. In the 4 months ended April 30th spot seconds averaged $23.02, and shipments $21.45, which compare with $21.75 and $21.10 last year, showing an increase of $1.25 in spot and 35c. per ton in shipments in 1901.

Pyrites.—New York imports this week were 5,350 tons Spanish iron pyrites. Acid makers are buying freely, while prices remain unchanged.

We quote per ton as follows: Mineral City, Va., lump ore, $4.90 per long ton, and fines $4.50. Charlemont, Mass., lump, $5.50, and fines $5. Spanish pyrites, 12c. per unit delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46@51% of sulphur; American from 42@44%.

Sulphate of Ammonia.—Uneasy. Future sales are noted at $2.55@$2.60 per 100 lbs. for 24@25% gas liquor, while prompt business has been done at $2.72½.

Nitrate of Soda.—Uninteresting, as little stuff is being bought. Spot has sold at $1.81¼@$1.82½ per 100 lbs., while shipments are quoted up to $1.85, according to position. The Alianza Company has declared a final dividend of 3%, making 6% for the year 1900. Its annual quota exports in the combination is 1,900,000 qtls., and in 1900 the company had a gross profit of £183,000 ($915,500), carrying forward £6,927 ($34,635). The

Nitrate Railways Company transported 21,054,179 qtls. nitrate of soda in 1900, against 20,182,752 qtls. in 1899; an increase of 871,427 qtls. in 1900. The company declared a dividend of 5% on its ordinary shares and preferred converted shares. The Salar del Carmen Nitrate Company reports a gross profit for 1900 of £35,382 ($176,910), and has declared a final dividend of 6s. per share free of income tax, making 10s. for the year.

Notwithstanding the lower freights from the west coast of South America the producers' combination are asking more for their nitrate than a year ago, as will be seen by the following prices which were quoted by New York importers on future shipments:

	1900.	1901.
January	$1.60@$1.70	$1.83¾@$1.85
February	1.65@ 1.90	1.83¾@ 1.85
March	1.70@ 1.85	1.80 @ 1.85
April	1.75@ 2.10	1.81¼@ 1.83¾
Average per 100 lbs.	$1.78	$1.83

While future orders were booked at an advance of 5c. for 100 lbs., sales of spot stocks in New York were recorded at 17c. less than last year, or at an average of $1.83, against $2 in 1900. The reason for the difference in this and last year's spot sales is best accounted for by the higher freight rates and uncertainty of tonnage in 1900.

Saltpeter.—Crude is dull at $3.25@$3.35 per 100 lbs., but refined is in good request at $4.25@$5.25 per 100 lbs., according to grade and quantity.

Potash Salts.—Contract deliveries are regular at agents' prices as follows for New York, Boston or Philadelphia shipment: Muriate of potash, 80@85%, $1.83 per 100 lbs.; muriate of potash, 95%, $1.86; sulphate of potash, 90%, $2.11; sulphate of potash, 96%, $2.13 per 100 lbs.; double manure salt, 48@53%, $1.12 per 100 lbs.; kainit, testing 12.4% actual potash, $9.05 per long ton; sylvinit, 38½c. per unit of sulphate of potash; manure salt, 20% actual potash, 66c. per 100 lbs.

Phosphates.—The industry looks more encouraging, as several of the larger plants in Florida and South Carolina have resumed work after a prolonged idleness. In the Mt. Pleasant field some Philadelphia people have taken a 30-days' option on a number of properties, the intention being, it is said, to consolidate them.

More charters have been taken, including vessels from Fernandina or Savannah to Rotterdam at 13s. ($3.25) and to Ghent at 14s. ($3.25), May sailing.

The shipments of high-grade Florida rock in the 3 months ended March 31st are reported by Messrs. Auchincloss Brothers as below, in long tons of 2,240 lbs.:

Ports.	1899	1900	1901
Baltic	13,739	10,137	21,880
Continental	69,705	56,053	66,206
Mediterranean	.....	1,653	.....
United Kingdom	16,630	7,711	6,700
Japan	1,000	...	.....
Australia	2,250	1,660	.....
Domestic	917	.....	.....
Total tons	104,241	77,214	94,786

The total shipments this year show an increase of 17,572 tons as compared with 1900, owing chiefly to the heavy movement to Continental ports.

The shipments of high-grade Florida rock from Savannah, Ga., in the 4 months to April, this year, were as follows, in long tons:

Destination.	Jan.	Feb.	Mar.	April.	Total.
Belgium	.....	2,042	1,839	2,003	5,884
Denmark	.....	.....	.....	2,600	2,600
Germany	6,629	8,995	7,275	8,665	31,564
Holland	2,757	2,700	2,945	2,860	11,262
United Kingdom	.....	3,369	.....	.....	3,369
Total tons	9,386	17,106	12,059	16,128	54,679
Total, 1900	8,508	10,880	12,987	15,484	47,859

The increase in exports this year amounted to 6,820 tons, or 12.4% as compared with the corresponding 4 months in 1900, owing chiefly to the freer movement to Germany. Of the total exports in 1901 Germany received direct 57.7%, while a quantity going to Holland was intended for this country.

Phosphates.	Per Ton F. o. b.	C. i. f. Un'd Kingdom or European Ports. Unit.	Long ton.
*Fla. hard rock (77@80%)	$6.50@7.00	7⅛@7¼d	$11.12@11.70
*Fla. land pebble (68@73%)	3.85@4.00	6⅛@6¼d	8.58@8.75
*Fla. Peace River (58@63%)	2.50@2.75	6⅛@6¼d	7.35@7.50
†Tenn. rock 78%, export	3.25@3.50	6¾@7d	10.53@10.92
†Tenn. 78% domestic	3 00	.....	.....
†Tenn. 75% "	2.75	.....	.....
†Tenn. 70@72% "	2.00@2.50	.....	.....
‡So. Car. rock, crude	2.50@2.75	.....	.....
§So. Car. rock, dried	3.25	6d	7.00
Algerian, rock (63@70%)	.....	6¼@7d	8.71@9.30
Algerian, rock (58@63%)	.....	6 @6⅛d	7.20@7.8
Tunis, Gafsa	.....	6 @6⅛d	7.20@7.80

* Fernandina, † Mt Pleasant. ‡ At mines. § On vessels, Ashley River.

Liverpool. Apr. 24.

(Special Report of Joseph P. Brunner & Co.)

Manufacturers report a better inquiry this week for most of the leading lines of chemicals, but, at the same time, the actual volume of business passing is still disappointing.

Soda ash is in fair request and quotations are steady at the usual range, according to destination. We quote spot value for tierces about as follows: Leblanc ash, 48%, £5 15s.@£6; 58%, £6 2s. 6d.@£6 7s. 6d. per ton net cash. Ammonia ash, 48%, £4 10s.@£4 15s.; 58%, £4 75s.@£5 per ton net cash. Bags, 5s. per ton under price for tierces. Soda crystals are unchanged and selling at £3 7s. 6d. per ton, less 5% for barrels, or 7s. less for bags, with special terms for certain favored markets. Caustic soda is in rather better demand and without nominal change in price. We quote as follows: 60%, £9 5s.; 70%, £10 5s.; 74%, £10 15s.; 76%, £11 per ton net cash.

Bleaching powder is in limited demand, but £7@£7 5s. per ton net cash is still quoted for hardwood packages, with special quotations for certain export markets.

Chlorate of potash is meeting with some inquiry, but actual orders are not plentiful. Quotations are without change at 3⅜@3½d. per lb. net cash.

Bicarb. soda continues firm at £6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages, also special terms for certain export markets.

Sulphate of ammonia is depressed and values have declined, £10 3s. 9d.@£10 5s. per ton, less 2½%, being now nearest range for good gray 24@25% in double bags f. o. b. here, as to quality.

Nitrate of soda is moving off quietly on spot at £8 15s.@£8 17s. 6d. per ton, less 2½%, for double bags f. o. b. here, as to quantity and quality.

IRON MARKET REVIEW.

NEW YORK, May 10, 1901.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending May 11, 1900. F'ces.	Tons.	May 10, 1901. F'ces.	Tons.	From Jan., '00. Tons.	From Jan., '0 Tons.
An'racite & Coke.	266	288,525	233	294,125	5,380,033	5,088,945
Charcoal.	24	6,250	23	7,225	137,297	146,605
Totals..	290	294,775	256	301,350	5,517 330	5,235,550

New orders are fewer in number, but this does not affect the activity of trades, as almost all plants are full of work for some months ahead. Some parties are inclined to hold back on contracts for the second half of the year, but it does not appear that they are likely to gain by it, in the way of lower prices.

In foundry iron there has been less buying, but bessemer and basic pig are in demand. Steel also is in demand and deliveries cannot be made fast enough to suit buyers.

Production continues very large. The May reports from the furnaces show that the output of pig iron is now over 300,000 tons a week. Notwithstanding this, the unsold stocks of pig iron reported show a decrease of 33,000 tons during May. In steel it is stated on good authority that the plants controlled by the United States Steel Corporation turned out close upon 800,000 tons of ingots in April, including both bessemer and open-hearth metal.

Birmingham, Ala. May. 6.

(From Our Special Correspondent.)

It cannot be said that the market is as satisfactory as it has been. Demand is not so active, though prices are firm.

The Sloss-Sheffield Steel and Iron Company, it is said, made some good sales at good prices. The statement is made that that company sold nearly 13,000 tons of iron last month and netted for it an average price of $11.369 therefor, which shows that No. 1 foundry sold above $12 and No. 2 between $11.50 and $12. Gray Forge sold above $10 at this rate. The sales books of the Tennessee Coal, Iron and Railroad Company for May are said to have shown an average price a little less than $11, but this is explained by the statement that more of the lower grades were sold than the better grades.

The Sloss-Sheffield Steel and Iron Company has blown out one of its North Birmingham furnaces. The company has 5 furnaces in operation. No further reduction in production is anticipated for the near future.

The following quotations are mentioned: No. 1 foundry, $11.75@$12.50; No. 2 $11.25@$11.75; No. 3, $10.50@$11; No. 4, $10@$10.50; gray forge, $10; No. 1 soft, $11.75@$12.50; No. 2, $11.25@$11.75.

There is an active demand for finished iron and steel. The rolling mills continue as busy as can be.

Delegates from Alabama to the annual convention of the Amalgamated Association of Iron, Steel and Tin Workers, which meets this month in Milwaukee, Wis., are preparing for the journey. It is stated here that the Amalgamated Association will demand a better wage. The scale committee will meet on May 16th.

A strike among pattern-makers during the past week in some of the foundries and machine shops for an advance of 25c. a day in wages, did not disturb many of the plants. Nothing can be heard as to a probable strike by the machinists when their formal demands for a 9-hour work day goes into effect, May 20th. The machinists have strengthened their organizations and some predict a strike. The machinists seem to be doing well and are making good money.

Buffalo, N. Y. May 8.

(Special Report of Rogers, Brown & Co.)

The market situation in this vicinity has not changed materially during the past week. The larger buyers, having purchased to cover their requirements for some time to come, are only in the field for special wants. Medium-sized orders, which bring the week's business up to a good average, continue to come in from the smaller purchasers and furnaces are taxed to take care of these and the continued calls from the larger consumers for hurry-up shipments on orders which have already been booked. The fact that two furnaces in this field have suspended operations on account of labor troubles has added to the numerous demands upon the other sources of supply for immediate shipments. Prices remain very firm, on the following basis, cash, f.o.b. cars Buffalo: No. 1 Strong Foundry coke iron, Lake Superior ore, $16; No. 2, $15.50; Southern Soft, No. 1, $16.50; No. 2, $16; Lake Superior Charcoal, $18; Coke Malleable, $16.

Cleveland, O. May 8.

(From Our Special Correspondent.)

Iron Ore.—The channels between the upper and the lower lakes continue to be blocked by ice and in consequence the movement of ore has not yet started. The delay has greatly strengthened freights, although a counter influence has been at work in the spreading of reports that the season's movement is not to be as large as was at first expected. The delay, however, has resulted in all of the surplus tonnage having been taken up, so that the supply of boats during the remainder of the season is to be about equal to the possible demand. This is sufficient to assure good freights all season, as shippers are now paying willingly the contract figures of 80c. from Duluth, 70c. from Marquette and 60c. from Escanaba. Season contracting at the same figures is proceeding slowly, only a few boats having been placed during the last week. The sales of ore have been rather slow, as no big contracts have been made since the first rush. The prices remain at $4.25 for bessemer and $3 for non-bessemer.

Pig Iron.—The sales of pig iron this week have not been large. The buyers seem to be well cared for up until July 1st and are in no hurry to cover their needs beyond that time. The supply of iron is not great. Bessemer is quoted still at $16.50; basic at $16; No. 1 foundry at $15.25; No. 2 foundry at $14.75.

Structural material is moving in a modest sort of a way, the biggest part of the present activity being specifications on former orders which are coming in quite freely. The new sales of material are hardly worthy of mention. The supply of plates is not such as to warrant any big orders being taken, but buyers are not looking around much for material. The price of structural material and plates remains the same, 1.60c. at the Pittsburg mills. Bars are not in as big demand as they were. The price remains as it was fixed by the pool, at 1.45c.

Old Iron.—The scrap iron trade is a little off just now. Dealers have so far resisted successfully any attempt to force prices down. These remain as follows: Steel rails, $16.50; iron rails, $20; No. 1 wrought, $16.50; machinery cast, $13; wrought turnings, $10; cast borings, $6.

Philadelphia. May. 9.

(From Our Special Correspondent.)

Pig Iron.—The only transactions mentioned today by local pig iron interests refer to moderate quantities of No. 1 X and No. 2 X foundry for early delivery at full prices. There are large consumers of foundry who stand ready to extend their contracts provided slight concessions are allowed, but makers and their representatives are unwilling to yield a single point just now. Users of pig are all pretty well supplied and foundrymen are in a cautious humor as to summer and autumn deliveries. The position of forge iron continues very strong and buying of small lots does not abate, it being the policy of mill people to cover as they get business. The demand for basic iron keeps up well and makers have had inquiries this week for large quantities, but the matter of price is more discussed than a month ago. Bessemer pig is scarce and strong. The average quotations are: No. 1 X foundry, $16; No. 2 X, $15.50; No. 2 plain, $15; standard gray forge, $14.50; ordinary, $14; basic, $14.50; standard Bessemer, $15.

Billets.—Manufactures have all the business they desire and users have themselves pretty well protected. So that both sides are making no signs. The present asking price is $26.25@$26.50.

Merchant Bars.—A good deal of private conferring and letter writing is going on among bar iron interests and the active ones in the movement express confidence that some understanding will be arrived at eastern Pennsylvania bar mills. Steel bars are particularly active and run from 1.50@1.70c.; iron, 1.50c.

Sheets.—There is less rush of orders and more

indifference among manufacturers about new business. There is also some business heard of at less than top prices. If a buyer insists on being taken care of his order is booked and he gets material about as he wants it. No. 10 is 2.50c.; No. 28 is 3.80c.

Pipes and Tubes.—Both home and foreign demand keeps up and prices are very strong.

Skelp.—Some more good orders have been run into our Eastern mills and still more are coming, but buyers complain at having to pay such prices as are held out.

Plates.—It is understood that all our local shipyards have bought material lately for newly booked work. Prices continue at 1.80c. for quarter-inch and universals; flange, 1.90@2.10c. It transpired this week that large bridge building orders are hanging fire over prices.

Structural Material.—There is no change whatever. Good orders keep coming.

Rails.—Less business is being done, but the booming condition in the stock and money markets is not without its influence in steel rail circles. The latest is that three or four big enterprises are now about at the point of development where orders may be expected. It is also said that more than $28 has been offered for small lots for repairing needs which have lately been decided upon.

Old Material.—Old iron rails are $20 and old steel $17. Choice railroad scrap sold this week at $20 for all in sight, which is regarded as a very good price. Some heavy steel scrap brought $17, but it is next to impossible to get it. Other kinds go at about usual prices.

Pittsburg. May 8.

(From Our Special Correspondent.)

There has been continued heavy buying in steel bars and the agricultural implement manufacturers in the West have covered fully half their requirements for the next year. Before the end of this month all contracts will have been placed, and it is estimated that the requirements for these manufacturers alone will aggregate 300,000 tons. In structural material the tonnage taken during the past week has been very large, the American Bridge Company taking the bulk of the business. It is estimated that about 10,000 tons of material were contracted for. The buying of pig iron has been limited to less than 10,000 tons. About 4,000 tons of bessemer pig iron was purchased for delivery during the remainder of this month and during June. The price remains stationary at $16.25 at the furnace. Jones & Laughlins, Limited, and the Carnegie Steel Company have again been buying basic iron for first half delivery. Thus far there has been little buying for second half delivery. The demand for sheets and plates continues strong and the American Sheet Steel Company is unable to make deliveries within less than 60 days. The demand for plates is good, all plants operating in full, with orders on their books sufficient to keep them in operation for three months, without new business. Owing to the scarcity of billets, both bessemer and open-hearth, there has been little buying.

Pig Iron.—Contracts for less than 2,000 tons of foundry iron were closed during the past week. The price remains unchanged at $15.25@$15.50 per ton delivered, Pittsburg. Forge iron is in fair demand, about 1,500 tons having been sold at $14.75, Pittsburg. Less than 4,000 tons of bessemer iron were purchased during the past week at $17 per ton delivered, Pittsburg.

Steel.—The sale of billets during the past week amounted to less than 1,000 tons for spot shipment at $25@$26 per ton. Open-hearth billets are selling at $28@$30 per ton.

Sheets.—The demand for sheets is increasing daily and the sheet manufacturers continue unable to make deliveries within less than two months. The demand for galvanized is also strong. The latter is held at 70 and 5 off. Black sheets, No. 28 gauge, are held at 3.35c.

Ferro-manganese.—No change has been made in the price of manganese and the largest producer continues to quote $58.50 per ton, delivered at buyer's mill.

New York. May 10.

Pig Iron.—The market is quiet, with prices, if anything, weaker. We quote as follows: Northern irons, tidewater delivery: No. 1 X foundry, $16@$16.50; No. 2 X, $15.25@$15.75; No. 2 plain, $14.75@$15.25; gray forge, $14.50@$14.75. For Southern irons on dock, New York, No. 1 foundry, $16@$16.50; No. 2, $15.50@$15.75; No. 3, $14.75@$15.25; No. 4, $13.75@$14.25; No. 1 soft, $16@$16.50; No. 2, $15.50@$15.75.

Bar Iron and Steel.—Buying is less than it was, but prices are upheld. We quote common bars at 1.50c. for large lots on dock; refined bars, 1.58c.; soft steel bars, 1.55c.

Plates.—Prices are unchanged, with mills having work enough to do. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 1.78c.; flange, 1.88c.; marine, 1.98c.; universals, 1.78c.

Structural Material.—There is enough buying in small lots to make a good market. We quote for large lots at tidewater as follows: Beams, 1.75c.; channels, 1.75c.; tees, 1.80c.; angles, 1.75c.

Steel Rails and Rail Fastenings.—New business is light, but mills have a lot of orders booked. Standard sections are now quoted at $28 at Eastern mills; light rails at $28@$30 according to weight. Spikes are 1.60c.; splice bars, 1.40c.; bolts, 2.10@2.25c.

METAL MARKET.

New York. May 10.

Gold and Silver.

Gold and Silver Exports and Imports

At all United States ports in March and year.

Metal.	March.		Year.	
	1900.	1901.	1900.	1901.
GOLD.				
Exports	$1,081,280	$490,269	$8,176,228	$9,129,040
Imports	1,921,036	2,487,019	5,824,944	8,478,305
Excess	I. $839,756	I. $1,996,750	E. $2,351,384	E. $650,735
SILVER.				
Exports	5,452,422	5,150,186	15,004,465	14,520,924
Imports	3,149,146	2,731,733	8,164,752	8,730,694
Excess	E. $2,303 276	E. $2,418,453	E. $6,839,713	E. $5,790,230

These figures include the exports and imports at all United States ports, and are furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending May 9th, 1901, and for years from January 1st, 1901, 1900, 1899 and 1898.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$509,000	$22,590	$396,225	$63,790	E. $818,845
1901..	16,906 994	1,030,892	12,907,430	1,481,087	E. 27,302,445
1900	9,6>9,608	1,328,194	13,914,469	1,641,059	E. 20 634,824
1899..	2,101,743	5,613,311	9,784,541	1,047,532	E. 5,245,441
1898..	4,426,939	61,464,897	13,065,963	1,622,093	I. 48,594,088

Exports of gold went chiefly to Germany; those of silver to London. Imports of gold were from the West Indies; those of silver from Mexico.

The United States Assay Office in New York reports the total receipts of silver at 19,000 oz. for the week. This makes a total of 1,328,000 oz. from January 1st.

Average Prices of Silver per oz. Troy.

Month.	1901.		1900.		1899.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January...	28.97	62 82	27.30	59.30	27.42	59.36
February..	28.13	61.06	27.49	59 76	27.44	59.42
March.....	27.94	60 63	27.59	59.81	27.48	59.64
April.....	27 30	59 29	27.41	59.59	27.65	60.10
May.....	.....	.....	27.56	59.96	28.15	61.23
June.....	.....	.....	27.81	60.42	27.77	60 43
July.....	.....	.....	28.23	61.25	27.71	60 26
August....	.....	.....	28.13	61.14	27.62	60.00
September	.....	.....	28.85	62.63	27.15	58.89
October ..	.....	.....	29.58	63.83	26.70	57.98
November	.....	.....	29.66	64.04	27 02	58.67
December.	.....	.....	29.68	64.14	27.21	58.99
Year....	.....	.....	28.17	61.33	27.44	59.58

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1901.	1900.	1901.	1900.	1901.	1900.	1901	1900.
Jan.....	16.25	15.58	26.51	27.07	4.35	4.68	4.13	4.65
Feb.....	16.38	15.78	26.68	30.58	4.35	4.675	4.01	4.64
March...	16.42	16.29	26 03	32.90	4.35	4.675	3.92	4.60
April....	16.43	16.76	25.93	30.90	4.35	4.675	3.98	4.71
May.....	.....	16.34	.....	29.37	.....	4.181	.....	4.53
June.....	.....	15.75	.....	30.50	.....	3.901	.....	4.29
July.....	.....	15.97	.....	33.10	.....	4.030	.....	4.28
August..	.....	16.35	.....	31.28	.....	4.250	.....	4.17
Sept.....	.....	16.44	.....	29.42	.....	4.350	.....	4.11
October..	.....	16.37	.....	28.54	.....	4.350	.....	4.15
Nov.....	.....	16.40	.....	28.25	.....	4.350	.....	4.29
Dec.....	.....	16.31	.....	26.94	.....	4.350	.....	4.25
Year.....	.....	16.19	.....	29.90	.....	4.37	.....	4.39

The prices given in the table for copper are the averages for electrolytic copper. The average price for Lake copper for the year 1900 was 16.52c.; for the month of January, 1901, it was 16.77c.; for February, 16.90c; for March, 16.94c; for April, 16.94c.

Prices of Foreign Coins.

	Bid.	Asked.
Mexican dollars	$ .48½	$ .50½
Peruvian soles and Chilean pesos	.43½	.46½
Victoria sovereigns	4.85	4.88
Twenty francs	3.84	3.88
Twenty marks	4.75	4.80
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

The expected came this week, in the partial collapse of the wild speculation in stocks. Almost everyone supposed it would come sometime, but almost everyone also believed that it would be postponed a little longer. Fortunately the business of the country is generally in a very sound condition and will probably be little affected by the Wall Street break.

The silver market has barely been maintained. Inquiry for silver has not been large, and the price shows a tendency to recession. There are no special features.

The statement of the United States Treasury on Wednesday, May 8th, shows balances in ex-

Imports and Exports of Metals.

Port.	Week, May 8.		Year 1901.	
	Expts.	Impts	Expt.	Impts.
New York.				
(N. Y. Metal Exchange.)				
Aluminum.....long tons	.....	10	41	50
Antimony ore... " "	.....	.....	.....	263
" regulus.. " "	.....	18	19	410
Copper, fine..... " "	2,013	263	20,873	6,072
" matte.. " "	224	.....	2,143	50
" ore..... " "	.....	.....	.....	13,390
" ash..... " "	.....	.....	.....	.....
Iron ore ..... " "	.....	.....	.....	75
" pig, bar, rod " "	671	....	9,171	977
" plates, sheets " "	.....	.....	249	.....
Lead..... " "	1,093	1,350	28,612	18,960
" ore..... " "	.....	.....	.....	.....
Manganese, ore. " "	.....	509	100	4,727
Metals, old, scrap " "	4	44	1,148	873
Composition... " "	.....	.....	3.449	131
Nails..... " "	387	.....	4,120	.....
Nickel ..... " "	10	.....	758	35
" ore, matte " "	.....	.....	.....	13,295
Pipe, iron & steel " "	415	.....	7,407	.....
Railr'd material " "	341	.....	9,392	902
Rails, old..... " "	.....	.....	.....	.....
Steel bars, plates " "	1,181	62	25,571	4,745
" rails..... " "	5,273	.....	39 151	.....
" wire..... " "	1,487	.....	12,459	.....
Tin ..... " "	.....	412	230	10,294
" and black plates " "	.....	16	.....	10,598
" dross..... " "	.....	.....	.....	.....
Zinc..... " "	.....	.....	537	589
" dross..... " "	.....	.....	128	.....
" ashes, skim " "	.....	.....	316	.....
" ore..... " "	2,004	.....	8,160	.....
Baltimore.				
(Special Correspondence).				
Antimony.....long tons	.....	.....	.....	10
Chrome Ore..... " "	.....	.....	.....	4.036
Copper, fine..... " "	327	.....	8,991	2,504
Iron pig, bar, etc. " "	.....	98	1,218	2.169
" ore..... " "	.....	12,697	.....	114.927
Manganese ore.. " "	.....	.....	.....	23,534
Nails ..... " "	.....	.....	306	.....
Pipe, iron & steel " "	.....	.....	801	.....
Spiegeleisen..... " "	.....	.....	.....	1,140
Steel, bars, etc.. " "	290	.....	31,839	72
" wire ..... " "	.....	.....	670	102
" rails..... " "	937	.....	48,054	.....
Tin..... " "	.....	.....	.....	175
" and blackplates " "	.....	.....	.....	143
Philadelphia.				
Chrome ore .....long tons	.....	.....	.....	195
Copper, fine..... " "	.....	.....	523	.....
" ore..... " "	.....	.....	.....	13,185
Iron, pig, bar.... " "	.....	.....	230	2,370
" ore ..... " "	.....	.....	.....	68,470
" pipe ..... " "	.....	.....	1,880	.....
Lead..... " "	.....	.....	200	.....
Manganese ore.. " "	.....	.....	.....	3,275
Metals, old..... " "	.....	.....	29	701
Nails ..... " "	.....	.....	87	.....
Pipe, iron & steel " "	.....	.....	500	.....
Railroad material " "	.....	.....	175	.....
Steel, bars, etc.. " "	.....	.....	4,177	.....
" rails..... " "	.....	.....	3,776	.....
" wire ..... " "	.....	.....	260	.....
Tin..... " "	.....	30	.....	260
" and blackplates " "	.....	36	.....	320
Zinc ore..... " "	.....	.....	2,064	.....
" dross ..... " "	.....	.....	106	.....
" ash ..... " "	.....	.....	32	.....

Total United States.

Articles.	March.		Year., 1901.	
	Expts.	Impts.	Expts.	Impts.
Antimony.. .....long tons	.....	69	....	399
" ore.... " "	.....	.....	21	119
Copper, in all forms..... " "	6,818	25,539	23,274	38,029
Iron, pig & bar.. " "	6,215	3,196	42 247	8,564
" ore..... " "	805	47,379	1,647	120,107
Iron & steel plates " "	6,357	121	15,570	429
Iron & steel rails " "	35,451	.....	84,848	117
" " wire " "	6,915	1.251	18.533	2,205
Lead, in all forms " "	8,840	9,495	27,046	32,916
Manganese ore and oxide..... " "	.....	13,447	.....	22,728
Nickel " & matte " "	165	9,724	539	13,324
Nails, cut..... " "	1,531	.....	5,029	.....
" wire..... " "	1,406	.....	4,456	.....
Quicksilver..... " "	41	.....	106	.....
Steel, billets, rods, etc..... " "	4,397	2,022	25,174	5,403
Tin..... " "	24	2 885	400	8,662
" & black plates " "	49	2,121	410	12,972
Zinc..... " "	624	1	1,315	131
" ore..... " "	1,308	.....	8,479	.....

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1¼c. a lb. on lead in ores; 2½c. a lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. a lb. Quicksilver, 7c. a lb. Spelter or zinc, 1½c. a lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

cess of outstanding certificates as below, compared with the corresponding day last week:

	May 1.	May 8.	Changes.
Gold	$95,767,053	$98,335,659	I. $1,568,606
Silver	17,487,773	17,557,490	I. 69,717
Legal tenders	9,070,898	9,919,378	I. 848,480
Treas. notes, etc.	84,903	97,204	I 12,301
Totals	$123,410,627	$125,909,731	I. $2,499,104

Treasury deposits with national banks amounted to $101,687,113, showing an increase of $3,325,647 as compared with the corresponding day last week.

The statement of the New York banks—including the 63 banks represented on the Clearing House—for the week ending May 4th give the following totals, comparison being made with the corresponding week in 1900 and 1899:

	1899.	1900.	1901.
Loans and discounts	$776,702,800	$787,777,000	$890,450,400
Deposits	899,625,400	869,155,300	973,111,600
Circulation	13,883,200	21,218,100	31,132,900
Reserve:			
Specie	188,438,700	165,479,800	182,302,700
Legal tenders	55,819,600	67,787,500	71,955,300
Total reserve	$244,258,300	$233,267,300	$254,258,000
Legal requirements	224,906,350	217,288,825	243,277,900
Balance, surplus	$19,351,950	$15,978,475	$10,980,100

Changes for the week, this year, were increases of $6,005,500 in loans and discounts and $2,321,100 in deposits; decreases of $182,000 in circulation, $4,855,100 in specie, $344,300 in legal tenders and $5,779,675 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars and comparison is made with the holdings at the corresponding date last year:

	1900.		1901.	
Banks.	Gold.	Silver.	Gold.	Silver.
N.Y. Ass'd	$165,479,800	.....	$182,302,700	.....
England	161,632,560	.....	177,199,095	.....
France	389,858,395	$227,650,775	482,178,975	$219,850,660
Germany	132,125,000	68,060,000	150,760,000	77,635,000
Spain	68,445,000	79,025,000	70,010,000	83,120,000
Neth'l'ds	24,335,000	29,880,000	25,286,500	28,635,000
Belgium	14,165,000	7,085,000	14,570,000	7,285,000
Italy	77,210,000	8,205,000	76,080,000	9,623,500
Russia	414,470,000	35,360,000	351,375,000	32,580,000

The returns of the Associated Banks of New York are of date of May 4th and the others are of date of May 2d, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold. The Bank of England reports gold only.

The Treasury Department's estimate of the money in the United States on May 1st is as follows:

	Total Stock.	In Treasury.	In Circulation.
Gold coin (inc. bullion in Treas)	$1,129,267,647	$246,767,053	$629,240,795
Gold Certificates	.....	.....	253,259,799
Silver Dollars	514,849,446	15,429,379	68,846,545
Silver Certifi	.....	.....	430,573,522
Subsid. Sil	90,082,284	9,829,207	80,253,077
Treas. Nts of 1890	51,880,000	84,903	51,795,097
U. S. Notes	346,681,016	9,070,898	337,610,118
Currency Certifi	.....	.....	.....
Nat. Bank Notes	350,764,257	7,038,975	343,725,282
Totals	$2,483,524,650	$288,229,415	$2,195,304,235

Population of the United States May 1st, 1901, estimated at 77,536,000; circulation per capita, $28.31. For redemption of outstanding certificates an exact equivalent in amount of the appropriate kinds of money is held in the Treasury, and is not included in the account of money held as assets of the Government. This statement of money held in the Treasury as assets of the Government does not include deposits of public money in National Bank depositaries to the credit of the Treasurer of the United States, and amounting to $91,809,593. The amount in circulation shows an increase of $8,060,655 over that reported on April 1st, 1901; and an increase of $134,778,772 over the estimate for May 1st, 1900.

Shipments of silver from London to the East for the year up to April 25th, 1901, are reported by Messrs. Pixley & Abell's circular as follows:

	1900.	1901.	Changes.
India	£1,629,562	£2,759,210	I. £1,129,348
China	265,324	314,125	I. 48,801
The Straits	93,152	79,976	D. 13,176
Totals	£1,988,338	£3,153,311	I. £1,164,973

Arrivals for the week, this year, were £173,000 in bar silver from New York, and £10,000 from the West Indies; total, £183,000. Shipments were £99,000 in bar silver to China, £63,500 to Calcutta and £10,000 to Bombay; total, £172,500.

Money is in stronger demand in India and exchange remains steady, Council bills selling at 15.91d. in London. The Indian Government has now a large reserve of silver, and is not a buyer, though advantage might be taken quietly of any fall in prices.

Other Metals.

Daily Prices of Metals in New York.

May.	Sterling Exchange.	Silver. Fine oz. cts.	Silver. London. Pence.	Copper. Lake, cts. ₱ lb.	Copper. Electrolytic ₱ lb.	Copper. London £ ₱ ton.	Tin, cts. ₱ lb.	Lead cts. ₱ lb.	Spelter. N. Y. cts. ₱ lb.	Spelter. St. L. cts. ₱ lb.
4	4.87¾	59⅞	27 9/16	16⅞ @17	16.35 @16.45	....	26	4.32½ @4.37½	4.05	3.87½
6	4.87¾	60	27⅝	16⅞ @17	16.35 @16.45	70½	26¼	4.32½ @4.37½	4.05	3.87½
7	4.87¾	60	27⅝	16⅞ @17	16.35 @16.45	70	26¼	4.32½ @4.37½	4.05	3.87½
8	4.87⅞	59⅞	27 7/16	16⅞ @17	16.35 @16.45	70	26¼	4.32½ @4.37½	4.05	3.87½
9	4.87⅛	59¼	27¼	16⅞ @17	16.35 @16.45	69½	26⅜	4.32½ @4.37½	4.05	3.87½
10	4.87⅛	59¼	27¼	16⅞ @17	16.35 @16.45	69½	26⅜	4.32½ @4.37½	4.05	3.87½

London quotations are per long ton (2,240 lbs.) standard copper, which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market continues quiet but firm. Consumption both here and abroad is good, manufacturers in all lines being busy. Demand is especially good for early shipments, and some of the refiners are reported to be in arrears with their deliveries. We quote Lake copper at 16⅞ @17c.; electrolytic copper in cakes, wirebars and ingots at 16.35@16.45c., in cathodes at 16.10@16.20c.; casting copper at 16¼@16⅜c.

The market for standard copper in London, which closed last week at £70 15s. for spot, £71 5s. for three months, opened on Monday 12s. 6d. lower. It fluctuated in the neighborhood of £70 for spot, £70 10s. for three months during the week, and closes at £69 10s. for spot and £70 for three months.

Refined and manufactured sorts we quote: English tough, £73 15s.@£74 5s.; best selected, £75 15s.@£76 5s.; strong sheets, £84@£84 5s.; India sheets, £80@£80 5s.; yellow metal, 7@7⅛d.

Tin.—While the market has not been very active, the undertone has been strong. There is a good demand for prompt shipment, and stocks in this country are not large. We quote spot at 26⅜c., futures at 25⅞c.

The foreign market, which closed last week at £118 10s. for spot, £114 12s. 6d. for three months, opened on Monday 10s. higher. On Wednesday it advanced to £119 15s. for spot, £115 15s. for three months, and closes at £120 7s. 6d. for spot, £117 10s. for three months.

Lead.—The market is without change, and a good business is reported doing at last prices, 4.22½@4.32½c. St. Louis, 4.32½@4.37½c. New York.

The foreign market is somewhat lower, the quotations being cabled as £12 5s.@£12 7s. 6d. for Spanish lead, £12 7s. 6d.@£12 10s. for English lead.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is firm and fairly active. The value for Missouri lead is 4.22½c., and for desilverized metal, 4.32½c.

Spelter.—Consumption continues good, galvanizers as well as brass manufacturers being very busy. Prices remain unchanged and we quote 3.85@3.87½c. St. Louis, 4.05c. New York.

The foreign market is quiet but steady, good ordinaries being quoted at £17, specials at £17 5s.

Antimony is without change. We quote Cookson's at 10@10¼c.; Hallett's at 8¾c.; Hungarian, Italian, Japanese and U. S. Star at 8⅝c.

Nickel.—The price continues firm at 50@60c. per lb., according to size and terms of orders.

Platinum.—Consumption continues good and prices are strong. For ingot platinum in large quantities, $18.20 per Troy oz. is quoted in New York. In London a recent quotation gives 75s. per ounce, unmanufactured, and 77s. 6d.@80s. for crucibles, etc. This is very nearly on a parity with New York prices.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 72c. per gram.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as follows:

	Per lb.		Per lb
Aluminum.		Ferro-Titanium (25%)	$1 00
No. 1, 99% ingots	33@37c.	Ferro tungsten (37%)	32c.
No. 2, 90% ingots	31@34c.	Magnesium	$2.75@3
Rolled sheets	42c. up	Manganese (over 99%)	$1.00
Alum.-bronze	20@23c.	Mangan'e Cop (20% Mn)	32c.
Nickel-alum	33@39c.	Mangan's Cop (30% Mn)	38c.
Bismuth	$2.05	Molybdenum (Best)	$1.45
Chromium (over 99%)	1.00	Phosphorus	50c.
Copper red oxide	50c.	American	70c.
Ferro-Molyb'um (50%)	$1.00	Tungsten (Best)	78c.
Ferro-Titanium (10%)	90c.		

Variations in prices depend chiefly on the size of the order.

Quicksilver.—While the nominal quotation is still $51 in New York, the metal can be had for $48.75@$50 per flask in large quantities, with a slightly higher rate named for small orders. San Francisco prices are the same as last week, $46.50@$47 per flask being named for domestic orders and $42@$43.50 for export. The London price continues nominally £9 2s. 6d. per flask.

LATE NEWS.

A dispatch from London, May 10th, says "Considerable excitement was caused on the Birmingham Iron Exchange yesterday by the news that an American syndicate was buying up all the stocks of Cleveland pig iron. At a meeting of the Ironmasters' Association, called to consider the matter, it was alleged that there were only 74,000 tons in stock."

A dispatch from Pittsburg, May 9th, says: "The directors of the Oliver Iron Company and the Regent Iron Company, component properties of the United States Steel Corporation, to-day received and accepted the resignations of Henry W. Oliver, president, and D. G. Kerr, vice-president, of the companies. T. F. Cole, general superintendent of the Oliver Iron Mining Company, was elected to succeed Mr. Oliver as vice-president in all the companies, with the additional title of general manager. Nelson P. Hulst was likewise elected vice-president and general mine engineer. Both officers will have headquarters in Duluth, Minn. These changes are incident to the general reorganization of the executive staffs of the various companies controlled by the United States Steel Corporation."

Counsel for the Amalgamated Copper Company on May 9th concluded their argument before Vice Chancellor Pitney at Jersey City upon the application of Calvin O. Geer for an injunction restraining the company from absorbing the Boston & Montana and Butte & Boston mining companies. Isaac S. Taylor, of counsel for complainant, said the directors of the Amalgamated Copper Company proposed to pay for the stock and plant of the companies to be absorbed far more than they were worth. John Garver, of counsel for defendants, denied that the stock and plant of the mining companies had been overvalued. The value of the stock and plants of the joint companies was $89,250,000, while the purchase price agreed upon was only $74,750,000. This value, he said, would soon be largely augmented by the increased price of copper. Vice Chancellor Pitney took the papers and reserved decision.

A dispatch from Pittsburg, May 9th, says that Mr. James W. Brown, formerly president of Howe, Brown & Co., of Pittsburg, has bought 50 acres of land at South Monaca, on the Pittsburg & Lake Erie Railroad, 27 miles from Pittsburg. Mr. Brown has associated with him Geo. A. Howe, and these two, with others, have organized the Colonial Steel Company, which will build a large crucible steel plant on the new site at Monaca, and will be a competitor of the Crucible Steel Company of America. Application has been made for a charter, and work on the building of the plant will be started in a very short time. The new site has excellent shipping facilities, both by rail and river, and is nicely located. The concern expects to be making steel early next year and has associated with it Henry C. Frey, formerly president of the Rochester Tumbler Company, but who is going to build a large glass plant at Monaca.

A dispatch from Pittsburg, May 9th, says: "The National Tube Company bought yesterday from the Republic Iron and Steel Company about 25,000 tons of plates, which will be rolled at the Valley Works of the Republic Iron and Steel Company, Youngstown, Ohio. The National Steel Company, one of the constituent companies of the United States Steel Corporation, has bought a large lot of coke from an outside coke concern. It is to be used in running one of the blast furnaces of the National Steel Company at Mingo Junction, O., which has just been started. Jones & Laughlins, of this city, have just started their fourth Eliza Furnace, giving this concern four furnaces at this plant and capable of turning out about 100 tons of iron per day each. It can be stated that with the blowing in of this stack and improvements at some of the furnaces of the Carnegie Steel Company. Pittsburg is making at the present time about 75,000 tons of iron each week, or about one-fourth the entire output of the whole country."

San Miguel County, Colorado.

(From Our Special Correspondent.)

Poulot and Voilleque expect to start down their uranium plant in McIntyre Canon about the middle of June.

Montrose County, Colorado.

(From Our Special Correspondent.)

The La Sal Copper Mining Company started up its leaching plant at Cashen on April 15th and it has since been running without interruption.

SLATE TRADE REVIEW.

New York. May 10.

The list of prices per square for No. 1 slate standard brand f.o. b. at quarries in car-load lots, is given below:

Size, Inches	Monson or Br'nville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Chap'n Keys'ne	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red
	$	$	$	$	$	$	$	$	$
24 x 14	6.50	3.50	3.00	3.00		5.10	3.00		....
24 x 12	6.60	3.50	3.00	3.00	3.80	5.25	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.00	..	5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.00	4.00	5.25	3.00	4.00	.. ....
20 x 12	6 90	3.75	.....	3 00	.. .	5.25	3.00	3.75	.....
20 x 11	6.80	.....	.....	3.25	.. .	5.25	3.00	....	.....
20 x 10	6.80	4.25	3.50	3.25	4.00	5.35	3.00	4.25	10.50
18 x 12	6.80	3.75	.....	3.00	.....	5.25	3.00	3.50	.....
18 x 11	7.00	....	....	....	.....	...	3.00	3.75	.....
18 x 10	7.00	4.25	3.50	3.25	4.00	5.35	3.00	4.00	10.50
18 x 9	7.00	4.50	3.50	3.25	4.00	5.35	3.00	4.25	10.50
16 x 12	6.80	3.75	....	3.00	.....	....	2.90	3.50	....
16 x 10	7.00	4.00	3.50	3.25	4.00	5 25	2.90	4.00	10.50
16 x 9	7.00	4.25	.....	3.25	4 00	5.35	2.90	4.25	10.50
16 x 8	7.00	4.50	3.50	3.25	4.25	5.35	2.90	4 25	10.50
14 x 10	6 60	3.75	3.25	3.00	.....	5 25	2.70	3.75	10.50
14 x 9	6.50	....	....	....	.....	....	2.70	3 75	10.50
14 x 8	6 60	3.75	3.25	3.00	4.00	5.10	2.70	4.25	10.50
14 x 7	6.40	3.75	3.25	3.00	3.75	5.10	2.50	4.25	10.50
12 x 10	5.75	....	.	....	.. .	...	2.50	3.25	....
12 x 9	5.60	....	.....	....	....	....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	2.85	.....	4.85	2.50	3.50	9.00
12 x 7	5.00	3.25	.....	2.85	3 25	4.85	2.00	3.50	9.00
12 x 6	4.80	3.25	.....	2.85	3.25	4.75	2.00	3.50	8.50

A square of slate is 100 sq. ft. as laid on the roof.

April showed a larger movement of slate from quarries, especially roofing. In the four months ended April 30th Pennsylvania shipments of roofing slate were about 27% larger than last year, but mill stock shows a falling off. Vermont shipments were large, owing partly to the improved export demand.

MINING STOCKS.

Complete quotations will be found on page 608, 609 and 610 of mining stocks listed and dealt in at:

Boston.	Salt Lake.	Montreal.
Colo. Springs.	San Francisco.	London.
Denver.	Spokane.	Mexico.
New York.	St. Louis.	Paris.
Philadelphia.	Toronto.	

New York. May 10.

The flurry in Wall Street caused widespread anxiety in the industrial combination list and in the copper shares.

Amalgamated broke from $125 to $104⅞ on large sales, while Anaconda fell from $51½ to $42, both closing weak. British Columbia was stronger than the other curb coppers, selling at $18, while Union, of North Carolina, sold at $7¼@ $7⅞.

Quicksilver, of California, shares are strong, and good trading in them is noted. Common rose from $2½ to $4¾ and preferred from $10 to $11.

Horn Silver, of Utah, after selling at $1.17 last Friday, changed hands this week at $1.10. Phoenix, of Arizona, shows large sales at advancing prices.

Consolidated California & Virginia declared a 10c. dividend, which is the first since February, 1895, when 25c. was paid. Notwithstanding this dividend there were large selling orders around, as holders believe this an opportune time to recover some of the assessment money they paid in the last six years. Ophir rose 5c. to $1.05.

Alice, of Montana, is up again at 50c.

Cripple Creek shares are moderately dealt in. Portland hangs around $2.85 and Elkton at $1.60, while Isabella slumped to 69c.

Auction sales were 20 shares Osceola Consolidated Mining Company, Mich., at $88.50 per share, 232 common shares United States Steel Company at $51½ per share and 306 preferred at $98¾, and $6,000 first series first mortgage 6% bonds Aetna Iron Manufacturing, Mining and Oil Company at $97½.

A seat was sold on the New York Stock Exchange at $70,000 to Mr. George P. Schmidt, who will be the youngest member.

Boston. May. 8.

(From Our Special Correspondent.)

The Boston Stock Exchange this week has been largely an annex to Wall Street, and has followed the wild fluctuations of stocks there. The dealings have been chiefly in the railroad and industrial stocks, and mining stocks have been comparatively neglected. Still, there has been quite a brisk trading, and the quotations have been good nearly all the week. The speculative trading was strongest in the Amalgamated group, and prices did not suffer much on the report of the New Jersey suits against the proposed purchase of Boston & Montana and Butte & Boston. The general belief is that the suit will be settled or withdrawn.

The fact that a large majority of the stocks of the two companies named has been deposited on the call recently issued shows rather a touching faith in Amalgamated good intentions. The stockholders are going into a blind pool and are not told what they are going to get; but they are going into it all the same.

This afternoon there was a heavy reaction in stocks, following the course of the market. It affected the railroad stocks chiefly. Mining shares showed only a moderate reaction, and recovered part of that later. The business in them was comparatively small. It is quite possible, however, that there may be a squeeze later and the speculators do not feel quite comfortable.

The Boston Stock Exchange announces that the Federal Trust Company's receipts for the stock of the Bingham Copper and Gold Mining Company, registered by the Massachusetts National Bank, have been admitted for quotation in the unlisted department, and will constitute a good delivery; and that the Bingham Copper and Gold Mining Company stock may be traded in when specified.

There has been some inquiry in regard to the exact dividend which Utah Consolidated Mining Company stockholders would receive in United States currency, a disbursement of 5s. having been declared in London a few weeks ago. Explanation is afforded in the circular which the International Trust Company sends out with the dividend checks, which says in part: "A dividend of 5s. per share having been declared by Utah Consolidated Gold Mines, Limited, of London, England, payable to stockholders of record April 29th, 1901, we hand you herewith our check in payment of said dividend, at the rate of $1.22 per share, due you on trustee's certificates standing in your name on the books of the International Trust Company, trustee."

The shareholders of the United States Mining Company, at their special meeting on Saturday, at Portland, Me., voted to authorize the directors to increase the capital stock of the company up to 500,000 shares, and the authorized capital from $10,000,000 to $12,500,000. This is the first time that a Maine corporation has ever authorized the issue of capital in excess of $10,000,000. Of the 250,000 shares outstanding, 235,000 were represented at the meeting. An early announcement of the plan of consolidation of the United States Mining Company and the Centennial-Eureka Mining Company is expected.

Colorado Springs. May 5

(From Our Special Correspondent.)

The market was much the same as last week, but with a lower amount of sales. On Thursday and Friday the trading picked up a little, but not enough to advance the sales to the amount of last week. Prices remain much the same as last week, though there was a little flurry in a few of the stocks, notably in the mines and preferred prospect list. These were Coriolanus, Gold Dollar, Eclipse, Lexington and Missouri. These advanced on the strength of strikes or reported strikes. Eclipse continued to advance all the week and sold as high as 12¼. Gold Dollar went as high as 19¾ asked, but reacted a little at the close of the week. Lexington sold as high as 10 on Friday, but reacted to 7¾ on Saturday. Missouri sold up to 13⅛, but reacted to 11½. A number of the stocks showed small losses for the week.

Several stocks were transferred from the unclassified list to where they belonged and the unclassified list will soon be done away with. The sales for the week amounted to 2,168,940 shares of the cash value of $267,534.

Salt Lake City. May 4.

(From Our Special Correspondent.)

The Mammoth at Tintic came forward May 3d with another dividend of 5c. per share, or a total distribution of $20,000. This brings the grand total of its distributions to $1,820,000.

Daly-West, of Park City, produced during April 2,600 tons of shipping ore and concentrates. A portion of the proceeds of this output went out in its regular $45,000 dividend.

Silver King this week distributed its regular monthly $100,000.

The stock market has been exceedingly erratic the past week. Trading has been unusually active. Ajax has had its ups and downs along with Yankee and Martha Washington; these three having been the leaders during the week in the trading.

Yankee Consolidated, which could have been taken in less than six weeks ago at 11c., touched a high-water mark of $3.01 per share on Wednesday of this week. On Thursday it received an awful jolt and dropped to $2. Friday it sold on the morning call at $2.50, closing on the afternoon call at $2.16 bid and $2.38 asked. Some stock changed hands on Saturday at $2.40. It is generally conceded that the stock is in the hands of so few persons that it is possible to bull or bear it at will.

San Francisco. May. 4.

(From Our Special Correspondent.)

The mining stock market has been quiet, rather dull indeed, but with no material changes in quotations. The transactions were only moderate. The news from the Comstock was not of any interest.

Consolidated California & Virginia is quoted at $2.45; Ophir, $1.05; Mexican, 34c.; Silver Hill, 34c.; Sierra Nevada, 28c.; Hale & Norcross, 23c.; Gould & Curry, 17c. Dealings were light all around. Standard Consolidated was $4 bid and $4.15 asked, with no sales.

The sales on regular call at the San Francisco Stock Exchange for the year to date compare as follows:

	1900.	1901.
January, shares	164,400	312,385
February	112,000	132,585
March	252,730	152,220
April	121,500	180,625
Total	650,630	777,815

There has been a fair increase in business this year; a gain is recorded in every month except March, the total increase being 127,185 shares.

On the Producers' Oil Exchange business was more active than last week and prices were well maintained. Hanford sold at $99@$100; Home, $3.40; Monte Cristo, $2.45; Reed Crude, 46c.

On the San Francisco Oil Exchange business was good. San Joaquin Oil & Development sold at $9.75; Kern Oil at $6.75; California & Utah, a comparatively new stock, at 26c.; Lion at 16c. The heaviest sales on both exchanges were of Lion and California Standard.

London. Apr. 23.

(From Our Special Correspondent.)

The London mining market is now entirely absorbed in the craze for West Africans and stockbrokers are acquiring properties and concessions as fast as they can. They do not care what is on the properties as long as they can get some. Every ship going to West Africa has a passenger list containing many well-known names in the mining world. Three new companies have been brought before the public—the Clinton Gold Concessions, Limited, capital £400,000; the Eginassie Wassau Banket Gold Reefs, Limited, capital £150,000; and the Gamelsoo Concessions, Limited, capital £200,000. None of these companies are of the least interest to anyone except the promoters and the Stock Exchange underwriters. It may be mentioned, however, that the well-known mine operator Mr. Pritchard Morgan, is interested in Clinton Concessions. The reports of the mining engineers on the various properties only say that the outlook from a mining point of view is promising; there is nothing in sight to warrant these huge capitalizations.

It is not often that mining properties in the Malay Peninsula are introduced to the London public, but this week a company to work such a property has been advertised. This is the Chindras Gold Mines, Limited, which has been formed to acquire the mines of that name about 40 miles from Malacca. The district belongs to a native ruler, who is under British protection, and it has been well known as a producer of gold for many years. The properties now introduced are said to contain quartz lodes and 10,000 tons of ore averaging 1 oz. per ton are said to be in sight. The directors, however, take no responsibility for the correctness of the claims, but state that they rely solely on the vendor and his engineer. There is also introduced into the prospectus a report dated 1896 made by Mr. H. W. Lake. This report is quite general in character, relating to the district and not to a specific property; and for whom it was made and why it is introduced are mysteries.

With the exception of West Africans, the mining market is extremely quiet. South Africans are still waiting for the restoration of peace. West Australians are unaccountably quiet, and the promises of revival and renewal of large outputs at Kalgoorlie made six months ago are so far unfulfilled. The Whitaker Wright group are still in a state of collapse and it would appear that there is little chance of any recovery being made.

During the last two years we have seen many sensational collapses in London, but the latest one—that of the Smelting Corporation—is perhaps the worst of all, as the promoter, Mr. H. E. Fry, went so far in fraudulent dealings as to put himself easily within the reach of the law. This corporation was formed three years ago to work the Fry process for treating zinc lead sulphides and it was backed by many eminent London financial people, such as Mr. Lidderdale, who was governor of the Bank of England at the time of the Baring crisis. The banking house of Barclay & Co. was also heavily implicated and holds shares and debentures to the extent of £150,000. It is not necessary to give the details of this collapse here as you will doubtless refer to it elsewhere, but I may mention that at least £500,000 have been wasted and that a large proportion of the shares are still held by the original underwriters. One of the supporters that has been hit the heaviest is Mr. Wilberforce Bryant, head of the match making firm of Bryant & May. If he is not worse off by £50,000 through his connection with Mr. Fry I should be greatly surprised.

Paris. Apr. 30.

(From Our Special Correspondent.)

The mining market has again been quiet and speculation has for the time sought other departments of the Bourse.

The most active section has been found in the copper shares. It is still asserted that your Amalgamated Company has acquired a large interest in the Rio Tinto Company, and that arrangements are in progress under which that company will work in harmony with your copper operators. From what I hear it is not impossible that a lot of the stock has gone to your side of the water.

There is still some excitement in the zinc and lead stocks. Malfidano is hopelessly low, and will remain so for some time.

The question of a general strike of coal miners is still unsettled. The vote taken was not definite enough in its results and another plebiscite has been ordered. Such a strike will certainly have disastrous results on trade of all kinds, and is likely to be stubbornly contested. Other labor troubles are quite possible as we are facing a period of less active trade and falling wages.

Official provisional returns are now issued of the railroads in France at the end of 1900. The total length of line in working on December 31st was 38,183 km., an increase of 274 km. in the year. The total was made up of 2,915 kms. of State lines, 33,965 of the six great companies, 975 of small companies and 328 of lines not classed. The above are only the lines of general interest, not including local lines not extending beyond the limits of one department. The total receipts amounted to 1,502,577,413 fr., of which 1,441,849,819 fr. was earned by the great companies. The taxes on transports and reimbursements, amounting to 64,732,485 fr., are not included in the totals. The increase in earnings was 94,369,031 fr. The receipts per kilometer were for the aggregate 39,525 fr., and 42,629 fr. for the six companies. The Northern Company occupies the first place, with 66,345 fr., followed by the Lyons, 51,072 fr.; Eastern, 40,431 fr.; Western, 33,045 fr.; Orleans, 32,683 fr., and Southern, 31,068 fr. The earnings on the State system were only 17,031 fr. per kilometer.

A quantity of Swiss 20-franc gold pieces are now in circulation in Paris, coming, it is supposed, from a stock held by the Bank of France. Those of recent date, from 1899, are from a new die. The diadem on the head of the Republic is suppressed, and the hair is bound up in a thick plait, while a range of mountains appears in the background. For beauty and delicacy of work the new type is inferior to the old one, which had not its superior in the coin of any European country. The new pieces bear only the word "Helvetia" in place of "Confederatio Helvetica."

The Bank of France has in preparation an issue of notes of a new design, printed in four colors. Only those for 50fr. are nearly ready.

ANNUAL MEETINGS.

Name of Co.	Locat'n.	Date.	Place of Meeting.
Am. Z'c L'd Sm.	Mo	May 20	Portland, Me.
Anaconda	Mont	May 15	Anaconda, Mont.
Anchoria-Lela'd	Colo	May 15	Colo Springs. Colo.
Buffalo Hump	Idaho	May 22	45 Cedar St., N. Y.
Empire Sta. Ida.	Idaho	May 22	45 Cedar St , N. Y
Goleta	Cal.	May 18	San Francisco, Cal.
*Oxford Beta	Cal	June 4	San Francisco, Cal.
St. Joe. Lead	Mo	May 16	55 Liberty St., N. Y.
Tomboy	Utah	May 15	Salt Lake City, Utah.
Wyandot	Mich	May 13	Boston, Mass.

* Special meeting.

DIVIDENDS.

NAME OF COMPANY	Latest Dividend. Date.	Per share.	Total.	Total to date.
†Am. Tin Plate, com.	May 15	$2.00		
†Beth'lehem Steel	June 1	.50	$150,000	$1,200,000
†Boston G. & C., Colo.	May 31	.02½	25,000	100,000
†Boston & Mont	May 29	5.00	750,000	23,975,000
Boston & Mont, extra	May 20	5.00	750,000	
†Cambria Steel, Pa.	May 15	.50	160,000	1,920,000
Con. Cal. & Va., Nev.	May 13	.10	21,600	3,920,400
Dabney Oil, Cal.	May 1	.01	10,000	10,000
*Daly-West, Utah	May 10	.30	45,000	832,500
*Empire State, Ida.	May 15	.10	50,554	901,459
Golden Eagle, Colo.	Apr 20	.01	5,000	30,000
*Homestake Oil, Cal.	May 1	.15	1.500	30,500
§Lehigh Coal & Nav.	May 27	1.50	430,399	18,947,389
*Mammoth, Utah,	May 10	.05	20,000	1,870,000
†National Tube, com.	May 15	1 50	597,906	2 391,624
†Ohio & Ind.C. N. Gas	June 1	1.00	90,000	540,000
Shelby Iron, Ala	May 15	5.00	50,000	300,000
Standard Con., Cal.	May 21	.10	17,839	3,999,780
†Standard Oil	June 15	12.00	12 000,000	104,625,000

* Monthly. † Quarterly.

It is with deep regret that I have just received news of the death of the chief to whom my correspondence has been addressed for over seven years past. Already I have heard expressions of sorrow at his loss. In France, where much of his early education was received, his ability and the excellent work he did was most highly appreciated. Azote.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No	Delinq.	Sale.	Amt.
Am Oil & Ref	Cal.	3	Apr. 29	May 27	.05
Andes	Nev.	53	May 10	May 28	.05
Best & Belcher	Nev.	73	May 3	May 24	.15
Bogan	Utah	6	Apr. 26	May 21	.10
Bullion	Nev.	58	Apr. 22	May 13	.03
Caribou Oil	Cal.		May 13		.05
Cerulean	Cal.		May 20		.01
Challenge	Nev.	31	May 29	June 20	.05
Crown Point	Nev.	82	Apr. 23	May 14	.10
Daylight	Utah	1	Apr. 22	May 14	.00½
Eureka Con. Drift	Cal.	29	May 28		.01
Grape Vine Canyon	Cal.	4	May 8	June 3	.05
Horseshoe Bar Con.	Cal		May 23		.01
Independent	Cal.		May 31	June 20	.10
Jenny Lind	Cal.		May 18		.05
Justice	Nev.	71	Apr. 23	May 13	.05
La Suerta	Cal.		May 30		.02½
Little Chief	Utah	7	May 15		.01
Lucky Bill	Utah	32	Apr. 27	May 21	.10
Manhattan	Utah	2	May 23	June 12	.00¼
Mariposa Con'l & Mg.	Cal		May 25		10.00
Ophir	Nev.	80	Apr. 22	May 13	.15
Osceola Con.	Cal.		May 25		.01
Potosi	Nev.	59	June 6	June 27	.10
Queen Esther Oil	Cal.		May 16	June 6	.10
Reward	Cal.	9	May 13	June 5	.02
Sacramento Con	Utah	2	May 22	June 11	.00¼
Sailor Con	Cal.	10	June 5	June 29	.01
Samson	Utah		May 10		.02
Savage	Nev.	103	May 6	May 24	.10
Sea Swan	Utah	1	May 8	May 28	.00½
Shower Con	Utah	3	Apr. 30	May 31	.02
Snowstorm	Utah	1	Apr. 15	May 15	.00¼
South Sliger	Cal.	1	May 6	May 27	.02
Union Con	Nev	61	May 8	May 27	.15
Utah Con	Nev.	36	May 15	June 5	.05
Victor	Utah		May 29	June 19	.02
West Morning Glory	Utah	7	May 25	June 11	.00½
Yellow Jacket	Nev.	7	May 7	June 12	.10

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY.	Location.	Par val.	May 3. H.	May 3. L.	May 4. H.	May 4. L.	May 6. H.	May 6. L.	May 7. H.	May 7. L.	May 8. H.	May 8. L.	May 9. H.	May 9. L.	Sales
Alamo	Colo.	1			.14		.50	.48	.53						2,000
Alice	Mont.				.45		.50	.48	.53						1,500
Amalgamated C.	Mont.	100	122⅝	119¾	121⅝	120	125	122⅛	125⅛	122	122¾	110½	105		224075
Anaconda, c.	Mont.	25	51.00	49.38	50.00	49.00	51.50	50.50	50.50	49.5	50.00	43.00	42.00		30,200
Anaconda Gold.	Colo.	5	.42										.21		500
Argentum-Jun.	Colo.	2													1,000
Best & Belcher	Nev.	3							.25						500
Breece	Colo.	25			1.75		.150								275
British Col. Cop.	B. C.	5	18.38	17.75	18.38	17.75	18.25	17.50	17.75	17.25	18.50	18.00	17.50	16.00	105
Brunswick Cons.	Cal.	1	.20		.19				.20						1,600
Chollar	Nev.	3							.12						300
Con. Cal. & Va.	Nev.	2½													
Cripple Cr. Con.	Colo.	3			.09⅛				.09						2,000
Daly	Colo.	25	1.50												100
Dunkin	Colo.	1	.12												300
Elkton Con.	Colo.	1					1.60								1,000
Gold Dollar	Colo.	1	.21												1,000
Golden Fleece	Colo.	1	.40						.38						1,000
Hale & Norcross	Nev.	3	.27												200
Homestake	S. Dak	100													
Horn Silver	Utah.	20	1.17						1.15	1.10					730
Isabella	Colo.	1	.70		.70	.69	.69						.63		2,000
Leadville	Colo.	10							.06						500
Mollie Gibson	Colo.	5											.23		500
Mt. Rosa	Colo.	1													
Ontario	Utah.	100													
Ophir	Nev.	3					1.05	1.00							900
Pharmacist	Colo.	1					.09½								800
Phoenix	Ariz.	1					.09	.08	.09	.10					47,300
Plymouth	Cal.	10					.10	.09							800
Portland	Colo.	1							2.85						80
Quicksilver	Cal.	100	2.50	2.00			2.75		2.50		4.75	2.88	3.50		10,511
Quicksilver, pf.	Cal.	100	10.00								11.00	10.00	10.00		1,600
Sierra Nevada	Nev.	3	.28												200
Standard Con	Cal.	10													
Syndicate	Cal.	1					.09								800
Tenn. Copper	Tenn.	25	25.00	23.50	24.75	23.75	25.00	23.50	25.00	23.50	24.00	22.00	22.00	19.00	
Union Copper	N. C.	10	7.50	7.25	7.50	7.25	7.50	7.38	7.75	7.63	7.25	7.00	7.50		3,980
Work	Colo.	1			.20	.19	.20								1,500

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.		$100	59	58	59⅛	58	60¾	59½	59⅞	58½	60	56½	58		51,015
" " " pf		100	97	96⅞	97	9½	97	96	97	96¾	9o½	95⅞	91		9,160
Am.S. & W. Con		100													
" " " pf'rn		100													
Col. Fuel & I.	Colo.	100	105	102	103	100½	104	101	105	102¼	105	98	90		11,200
Col. & H. C.& I.	"	100	18½		18⅜		20	19	19½		18½	18			3,300
Empire S., Ida.	Idaho	10	12	11⅛	11⅛	10	11	10	10	9	10				
Federal Steel		100													100
Fleming'n C.&C	W.Va	100	8	4	8	4	8	4	8	4	8	4	8	4	
*Mong. R. Coal	Pa.	100	14¾	14¼	14¼	14	13⅝		13⅝	13¼					4,190
" " " pf	"	100	48½				48⅛		48½						
National Lead		100	17⅛	17	17⅜	17			17⅛		17⅜	16	15½		2,600
" " " pf		100	82½	82⅜	82		82		82		82⅜		82		700
National Salt		109	42¾	44			45				44	43½	43¼		1,200
" " " pf		100	77⅜				77						75½		400
*Pittsburg Coal	Pa.	100	33⅛	33⅛	33		33½	33⅛	33⅜	33¼					8,176
" " " pf	"	100	97⅜	97	97		97	96¾	97	96¾					1,684
Republic I. & S.		100	20⅛	19⅞	20	19	20⅛	20	20⅜	20	20	18½	17		11,070
" " pf		100	77	76	76	74½	77	76	76¾	75¼	76¼	71½	71		9,095
Sloss-Shef		100	39				38¼	38	38		37½	37	38		1,600
" " pf		100													
Stan. Oil		100	836	832	837	830	842	838	837	834	820	810	795	780	19
Tenn. C. I.&R.R		100	65¾	63	64	62⅜	64½	63½	64¾	65	63¼	55	58		51,420
Va. Coal & C.	Va.	100	9	8	9	8	8½	7½	8½	7½	8½	7⅞			

* On Pittsburg, Pa., Exchange. Total sales, 483,860.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par value.	May 2.	May 3.	May 4.	May 6.	May 7.	May 8.
Belcher	Nev.	$3.00	.13	.13	.13	.11	.11	.11
Best & Belcher	"	3.00	.31	.32	.31	.27	.27	.26
Caledonia	"	3.00	.62	.61	.61	.58	.61	.61
Challenge Con	"	3.00	.12	.12	.13	.10	.10	.10
Chollar	"	3.00	.08	.07	.08	.06	.05	.06
Confidence	"	3.00	.62	.61	.63	.55	.50	.55
Con. California & Virginia	"	2.50	2.45	2.45	2.45	2.25	2.30	2.25
Crown Point	"	3.00	.16	.16	.15	.15	.15	.14
Gould & Curry	"	3.00	.17	.17	.17	.16	.14	.13
Hale & Norcross	"	3.00	.23	.23	.23	.19	.19	.19
Justice	"	2.00	.06	.06	.06	.06	.06	.05
Mexican	"	3.00	.31	.32	.29	.23	.19	.18
Occidental Con	"	3.00	.03	.03	.03	.03	.03	.03
Ophir	"	3.00	1.00	1.00	1.05	.91	.88	.85
Potosi	"	3.00	.06	.07	.07	.04	.04	.04
Savage	"	2.50	.16	.14	.13	.12	.12	.11
Sierra Nevada	"	3.00	.26	.23	.23	.20	.17	.17
Standard Con	Cal.	10.00	3.90	4.00	4.00	4.00	4.00	4.00
Union Con	Nev.	2.50	.11	.10	.10	.21	.21	.20
Utah Con	"	1.00	.02	.02	.02	.02	.01	.01
Yellow Jacket	"	3.00	.22	.20	.18	.17	.18	.17

CALIFORNIA OIL STOCKS.*

Name of Company.	No. of shares.	Par Val.	Apr. 20. H.	Apr. 20. L.	Apr. 22. H.	Apr. 22. L.	Apr. 23. H.	Apr. 23. L.	Apr. 24. H.	Apr. 24. L.	Apr 25. H.	Apr 25. L.	Apr. 26. H.	Apr. 26. L.	Sales
Blue Goose	5,000	$100	2.00		2.00		2.00		2.00	1.50	2.00	1.60	1.50		155
Buckhorn	20,000	10.00	2.75				2.75				2.75				
Cal. Standard	500,000	1.00	.89	.88	.89	.88	.40	.88	.40	.88	.40	.86	.88	.87	9,200
Caribou	100,000	1.00	.70		.70	.65	.69		.78		.69				550
El Dorado	100,000	1.00	1.45		1.40		1.40		1.50	1.40	1.50	1.40			
Four	300,000	1.00	.53	.47	.50	.48	.50	.49	.50	.48	.50	.48			4,400
Hanford	2,000	10.00	95.00	94.00	95.00	98.00	96.00	94.00	96.00	94.00	99.00	95.00			17
Hanf'd F. & K.	150,000	1.00	.15		.20	.16	.17	.15	.20	.17	.17	.15			300
Home	100,000	1.00	8.60	8.50	8.60	8.55	8.60	8.50	8.50	8.45	8.40	8.40	8.35	8.20	2,260
Homestake	10,000	10.00	7.50		7.50		7.50				7.50				
Independence	600,000	1.00	.18	.17	.19	.17	.19	.18	.20	.18	.19	.18			4,350
Kern	100,000	1.00	7.50	7.00	7.25	7.00	7.26	7.00	7.00	6.75	7.00	6.75			275
Kern River	20,000	5.00	14.50	13.00	14.00	13.00	14.00	13.00	14.00	13.00	15.00	12.50			135
McKittrick	60,000	1.00	.35		.35	.25	.40		.35	.25	.35	.25			300
Mo'arch of Ari	500,000	1.00	.58	.57	.59	.57	.58	.53	.55	.52	.55	.53	.54	.52	5,800
Monte Cristo	500,000	1.00	2.45	2.35	2.45		2.45	2.40	2.45	2.40	2.45	2.40			
Oil City Petrol	5,000	100.	.27	.25	.27	.26	.27	.26	.27	.26	.28	.26			1,000
Petrol. Center	500,000	1.00	.15	.14	.15	.13	.14	.13	.14	.13	.14	.13	.16	.13	24,500
Queen Esther	100,000	1.00	2.00												
San Joaquin	100,000	1.00	10.00	9.00	10.00	9.63	10.00	9.63	10.00	9.50	10.00	9.25			160
Sterling	250,000	1.00	2.15	2.05	2.13	2.05	2.10	2.00	2.05	2.00	2.05	2.00	2.05	2.00	500
Sunset (Orig.)	100,000	5.00			.80		.80		.80		.30	.25	.30	.25	300
Twenty-eight	60,000	10.00	1.40	1.30	1.40	1.30	1.40	1.30	1.40	1.30	1.40	1.30	1.45	1.37½	150
Yukon	100,000	2.50	.35		.36	.33	.35		.40				.36		

* Producers' Oil Exchange. San Francisco. Total sales. 54,357 shares.

ST. LOUIS, MO.*

NAME.	Location.	Share capital.	Par val.	Apr. 30. Bid.	Apr. 30. Ask.	NAME.	Location	Share capital.	Par val.	Apr. 30. Bid.	Apr. 30. Ask.
Am.-Nettle	Colo.	800,000	$10	$0.95	$1.10	Granite Bimetallic	Mt.	1000,000	$10	$2.22	$2.35
Catherine Lead.	Mo	50,000	10	5.00	5.75	Kan. & Tex. Coal.	Mo	25,000	100	48.00	51.00
Central Lead.	Mo	10,000	100	130.00	135.00	Renault Lead.	Mo	80,000	10	11.00	12.00
Columbia Lead.	Mo	50,000	10	13.00	13.50	St. Joe Lead.	Mo	300.000	10	13.75	14.50
Con. Coal	Ill.	50 0 0	100	14.00	14.50						
Doe Run Lead.	Mo	10,000	100	123.00	132.50						

* From our special correspondent.

STOCK QUOTATIONS.

BOSTON, MASS.†

NAME OF COMPANY.	Par val.	Shares issued.	May 2. H.	May 2. L.	May 3. H.	May 3. L.	May 4. H.	May 4. L.	May 6. H.	May 6. L.	May 7. H.	May 7. L.	May 8. H.	May 8. L.	Sales
Adventure Con..	$25	100,000	17.50	17.18	18.00	17.25	17.50	17.00	17.50	17.00	17.25	17.00	17.00	15.50	7,305
Aetna	5	100,000	.....	.....	.....	.....	.75	.....	.....	.....	.....	.....	.75	.....	300
Allouez	25	80,000	3.00	.....	3.50	3.00	3.25	3.00	3.25	3.00	3.25	.....	3.00	.....	845
Amal. Copper	100	750,000	124¼	121⅛	122½	119	122	119⅛	125	122⅛	124	122¼	125	114	34,565
Am. Z. L. & Sm.	25	60,000	16.25	.....	16.00	.....	16.00	15.00	16.00	15.13	15.13	15.00	15.00	.....	3,065
Anaconda	25	1200,000	52.00	50.75	51.00	50.63	50.00	.....	.....	.....	50 50	50.00	48.38	.....	232
Arcadian, c	25	150,000	21.50	20.75	20.50	20.00	20.38	20.00	20.00	19.00	19.00	17.50	18.13	17.50	2,421
Arnold	25	60,000	.....	.....	.....	.....	.....	.....	.....	.....	4.75	3.50	.....	.....	150
Atlantic, c	25	40,000	35.00	33.00	35.00	34.50	34.75	.....	35.00	34.50	34.00	33.00	33.00	32.50	1,889
Baltic, c	25	100,000	51.00	48.75	52.00	48.00	48.00	47.00	48.00	47.00	49.00	47.00	46.00	42.00	8,466
Bingham, c. g	10	190,000	25.25	25.25	26.00	25.00	25.50	25.00	25.50	24.50	25.50	25.00	25.25	24.00	13,704
Bonanza Dev	10	300,000	1.63	1.25	1.38	1.25	1.38	.....	.....	.....	1.35	.....	.....	.....	1,240
Boston, g	10	100,000	6.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.50	.....	200
Boston & Mont	25	150,000	450	445	442	435	440	436	445	440	437	435	434½	434	531
British Columbia	5	200,000	18.50	18.00	18.50	.....	.....	.....	.....	.....	.....	.....	19.00	18.00	300
Butte & Bost., c.	10	200,000	116	114	.....	.....	113	.....	115¾	115	115	113	114	103	4,273
Cal. & Hecla, c	25	100,000	837½	835	837½	827½	830	.....	832	831	830	.....	830	.....	51
Catalpa	10	300 000	.....	.....	.....	.....	.....	.....	.....	.....	.30	.....	.....	.....	500
Centennial, c	25	90,000	34.25	32.25	34.00	30.25	31.50	30.25	31.75	31.00	31.00	30.50	30.50	28.25	25,011
Cent'l-Eureka	25	100,000	34.00	32.75	34.00	32.00	32.25	32.00	33.13	32.00	33.00	32.00	32.50	30.50	6,731
Central Oil	25	60,050	.....	.....	11.00	.....	.....	.....	11.00	.....	.....	.....	.....	.....	120
Cochiti, g	10	175,000	7.50	.....	7.50	.....	.....	.....	7.50	.....	7.50	7.25	6.75	.....	830
Cons. Mercur, g.	5	1000,000	3.50	3.13	3.50	3.25	3.00	.....	3.00	.....	3.00	.....	3.00	.....	3,150
Copper Range	25	100,000	64.00	59.00	61.00	56.75	59.00	57.00	59.00	58.00	58.50	57.50	57.00	52.00	12,250
Daly-West	20	150,000	.....	.....	35.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Dominion Coal	100	150,000	36.75	.....	36.50	35.00	36.00	35.00	36.00	.....	36.25	36.00	36.25	36.00	2,775
do, pref	100	80,000	.....	.....	114½	.....	.....	.....	115	.....	115	114½	.....	.....	85
Elm River	10	100,000	5.50	5.00	5.00	.....	.....	.....	5.00	.....	4.75	.....	.....	.....	935
Franklin, c	25	100.000	19.88	18.50	19.50	19.00	18.00	.....	18.50	18.00	18.50	18.00	18.00	.....	2,935
Humboldt	25	40,000	.....	.....	.....	.....	.....	.....	.25	.....	.....	.....	.....	.....	30
I. Royal Con., c.	25	15,000	56.50	54.00	55.00	52.00	52.50	51.00	53.50	51.00	53.50	52.50	52.50	48.00	13,573
Mass Con	25	100,000	20.00	19.25	19.75	19.25	19.00	18.50	19.00	18.13	18.63	18.25	18.50	18 00	6,255
Mayflower	25	100,000	2.50	.....	.....	.....	2.25	.....	2.25	.....	2.25	.....	.....	.....	350
Melones	10	167,577	.....	.....	.....	.....	.....	.....	.....	.....	2.00	.....	.....	.....	200
Merced	15	100,000	.....	.....	.....	.....	.....	.....	.....	.....	5.13	.....	.....	.....	200
Michigan	25	100,000	9.00	8.63	8.50	.....	8.50	8.00	8.25	7.25	7.75	7.50	7.50	7.25	1,660
Mohawk, c	25	100,000	53.50	46.50	47.00	40.00	42.00	40.00	42.25	41.00	40.75	39.13	40.00	37.00	37,344
Mont. C. & C	25	200,000	.....	.....	.....	.....	.....	.....	5.25	5.00	5.50	5.00	.....	.....	770
National	25	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	551
N.E. Gas & Coke	100	100,000	12.00	.....	12.00	11.50	11.50	11.25	12.50	11.88	12 00	11.88	.....	.....	15,796
Old Dominion, c	25	150,000	36.25	35.50	36.00	33.50	34.00	33.50	35.00	33.50	34.50	33.25	33.75	31.50	6,606
Osceola, c	25	93,000	90.50	88.50	93.00	90.00	90.00	87.50	89.50	88.25	90.00	89.00	89.50	86.25	.....
Parrot, s c	10	229,350	57.00	55.00	56.00	54.50	54.88	54.25	55.00	54.25	55.00	54.50	55.00	52.00	5,579
Phoenix Con	25	100,000	4.00	.....	4.00	.....	4.00	.....	.....	.....	4.00	3.50	.....	.....	851
Quincy, c	25	100,000	178	177	179	.....	177	175	176	175	175	.....	170½	.....	276
Rhode Island	25	100,000	6.00	5.63	6.00	5.38	5.38	5.00	5.25	5.00	5.50	5.00	5.00	.....	1,930
Santa Fe, g. c	10	250,000	8.75	8.25	8.50	8.00	8.25	.....	8.50	8.00	8.00	.....	8.25	8.00	1,747
San Ysabel	5	130,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shawmut Oil	25	50,000	.....	.....	.....	.....	.....	.....	15.50	.....	15.75	15.50	16.00	15.75	795
Tamarack, c	25	60,000	340	337	343	340	.....	.....	342	340	340	.....	330	.....	412
Tecumseh	25	80,000	1.75	.....	.....	.....	.....	.....	1.75	.....	2.00	.....	1.75	.....	255
Trimountain	25	100,000	44.75	44.00	45.25	43.00	44.75	44.50	44.50	44.00	44.00	42.00	43.50	40.00	5,112
Trinity	25	160,000	35.38	34.00	34.50	31.00	32.88	31.38	33.75	32.50	33.00	32.75	32.50	29.50	8,058
UnitedStatesMg.	25	250,000	24.00	22.25	23.75	21.75	23.00	22.00	23.63	22.00	22.25	22.50	22.00	18.50	33,712
U. S. Oil	25	100,000	15.00	14.50	15.00	.....	15.00	.....	15.00	14.13	15.00	14.00	.....	.....	722
Utah Con., g. c.	5	300,000	34.50	32.63	33.00	32.00	32.50	32.00	32.50	31.75	32.50	31.75	32.00	30.25	4,600
Victoria	25	100,000	.....	.....	4.00	3.75	3.75	.....	3.75	.....	.....	.....	.....	.....	1,124
Winona, c	25	100,000	4.25	4.00	4.50	4.00	4.25	4.00	4.00	.....	4.00	3.75	3.75	.....	910
Wolverine	25	60,000	59.00	55.00	60.00	60.00	60.50	58.00	60.00	57.50	59.00	56.00	57.00	54.00	16,460
Wyandot	25	100,000	1.75	1.50	1.50	.....	.....	.....	1.50	.....	2.00	.....	1.50	.....	7 00

†Official quotations Boston Stock Exchange. Total sales, 306,683 shares.

PHILADELPHIA, PA. §

NAME OF COMPANY.	L'cation.	Par Val.	May 2. H.	May 2. L.	May 3. H.	May 3. L.	May 4. H.	May 4. L.	May 6. H.	May 6. L.	May 7. H.	May 7. L.	May 8. H.	May 8. L.	Sales
Am. Alkali	.....	$50	1.38	1.25	1.50	1.38	1.38	1.25	1.38	.....	1.38	1.25	1.25	.....	1,365
Am. Cement	.....	10	7.00	.....	7.00	6.88	.....	.....	7.00	.....	.....	.....	7.00	6.75	475
Bethlehem Iron	Pa.	50	63.00	.....	63.25	62.00	.....	.....	63.00	.....	.....	.....	.....	.....	650
Bethlehem Steel	"	50	22.50	22.00	22.38	22.13	22.00	.....	24.00	22.50	24.50	23.88	24.75	23.00	12,626
Cambria Iron	"	50	47.00	.....	.....	.....	46.75	.....	47.00	46.38	46.75	.....	45.75	.....	291
Cambria Steel	"	50	23.88	23.50	23.88	23.00	23.38	.....	24.00	23.63	24.50	24.13	24.38	23.63	42,132
Susq. I. & S	"	10	2.50	2.38	2.25	.....	2.25	.....	2.25	.....	2.25	.....	2.25	2.13	1,115
United Gas I	"	50	123	122½	122½	121¾	122	.....	122¾	.....	123¾	122	122	120	2,080

Total shares sold, 60,734. § Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia.

SALT LAKE CITY, UTAH. May 4.

STOCKS.	Shares.	Par val.	Bid.	Asked.	STOCKS.	Shares.	Par val.	Bid.	Asked.
Ajax	300,000	$10	$1.43½	$1.44	Horn Silver	400,000	$25	$1.05	.....
Albion	.....	....	.30	.40	Joe Bowers	400,000	1	.02½	$0.04½
Alice	400,000	25	.32	.50	Lower Mammoth	150,000	1	4.47	4.47¾
Anchor	.....	....	2.25	3.00	Mammoth	400,000	5	2.30	2.35
Ben Butler	.....	....	.03½	.11¾	May Day	400,000	¾	.86	.87
Bullion-Beck & Ch.	100,000	10	3.00	4.00	Northern Light	400,000	5	.07¼	.09
Centennial Eureka	200,000	25	31.00	34.00	Ontario	150,000	100	8.60	.....
Cons. Mercur	1,000,000	5	3.10	3.17½	Rocco-H'st'k-Nev.	.....	....	.....	.95
Dalton	500,000	5	.....	.....	Sacramento	1,000,000	5	.37	.40½
Dalton & Lark	2,500,000	1	.03½	.09¼	Showers Cons	400,000	5	.14	.16½
Daly	150,000	20	1.99½	2.02	Silver King	150,000	20	.....	85.00
Daly-West	150,000	20	35.25	36.05	Silver Shield	.....	....	.07⅜	.09½
Dexter	200,000	5	.30	.39	Star Consolidated	500,000	1	.58½	.....
Eagle & Blue Bell	250,000	1	.75	.75½	Sunbeam	250,000	1	.70	1.00
Four Aces	250,000	1	.....	.05½	Swansea	100,000	5	3.85	4.05
Galena	100,000	10	.05	.11	South Swansea	150,000	1	.65½	.67½
Golden Eagle	250,000	1	.02¼	.03⅞	Utah	100,000	1	.60	.75
Grand Central	250,000	1	5.31	6.00	Valeo	200,000	10	.23½	.35
Homestake	400,000	1	.....	.07	Yankee Consol'd	250,000	0.10	2.49	2.48

TORONTO, ONT.

NAME OF COMPANY.	Par Val.	Apr. 27. B.	Apr. 27. A.	Apr. 29. B.	Apr. 29. A.	Apr. 30. B.	Apr. 30. A.	May 1. B.	May 1. A.	May 2. B.	May 2. A.	May 3. B.	May 3. A.	Sales.
Ontario:														
Golden Star	1	.06⅝	07	.06⅝	.06¾	.06¼	.06⅛	.06	.07	.06	.06¾	.06	.03¾	7,500
Ham Reef	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British Col.:														
Cariboo M'k	1	.34	36	.34	.36	.33	.36	.34½	.35	.34	.36	.34	.36	5,000
Center Star	1	.28	.32	.36½	.38	.35	.37	.24	.29	.28	.30½	.30	.30½	8,000
Crow's N. C.	25	81.00	85.00	81.00	86.00	78.00	85.00	70.00	83.00	70.00	80.00	70.00	80.00	.....
Deer Trail	1	.....	.....	.....	.....	.02	.02½	.01⅝	.02½	.01¾	.02¼	.01½	.02½	1,000
Eve Star	1	.03	05	.02½	.05	.03	.06	.02½	.05	.05	.....	.02	.05	.....
Fairview	1	.02⅞	.03	.02½	.09	.02	.02¼	.02½	.02¾	.02½	.02¾	.02½	.02¾	12,500
Iron Mask	1	.25	.35	.28	.35	.28	.34	.28	.32	.28	.33	.28	33	.....
Jim Blaine	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Knob Hill	1	.45	.55	.....	.....	.....	.....	.....	.....	.....	.....	.45	.60	.....
Mont Cristo	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mont & Lon	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morrison	1	.02	.06	.....	.....	.03½	.05	.03½	.05	.03½	.05	.03½	.05½	.....
Mount. Lion	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.02½	.04½	.....
North Star	1	.50	.70	.40	.70	.53	.65	.53	.68	.50	.65	.56	.65	.....
Payne	1	.25	.30	.20	.27	.28	.38	.23	.23	.23	.28	.24½	.26	.....
Princess M	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rambler	1	.15	.23	.15	.23	.22	.23½	.20	.24	.22	.25	.23	.25	1,000
Republic	1	.19½	.21	.15	.20	.....	.....	.18	.20	.12¾	.19¾	.19	.20½	24,000
Van Anda	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Victory Tri.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virtue	1	.08	.11	.09	.12	.09	.11	.08	.11	.09	.10½	.08	.11	.....
War Eagle	1	.15	.15½	.12	.18	.15	.19	.12½	.15	.13	.15	.13½	.17	.....
Waterloo	0.10	.01½	.02½	.....	.....	.....	.....	.01½	.02½	.01	.02½	.01	.02½	.....
White Bear	1	.01¾	.02¼	.01½	.02¼	.....	.....	.01⅞	.....	.02	.02⅛	.01⅞	.02⅛	40,000
Winnipeg	1	.06¾	.....	.06	.08	.02	.07	.02	.06	.02	.07	.02	.07	.....
Develop Co.:														
B.C.G. Field	1	.0⁻3¼	.02½	.01¾	.02½	.01½	.02¾	.01⅝	.02¼	.01¾	.02¼	.01¾	.02¼	1,000
Can. G. F. S.	0.10	.05½	.06	.05½	.08	.05½	.05½	.05	.06	.05	.06	.04	.06	.....

Total shares sold, 100,000.

COLORADO SPRINGS, COLO. §

NAME OF COMPANY.	Par val.	Apr. 29. B.	Apr. 29. A.	Apr. 30. B.	Apr. 30. A.	May 1. B.	May 1. A.	May 2. B.	May 2. A.	May 3. B.	May 3. A.	May 4. B.	May 4. A.	Sales.
Acacia	$1	.13	.13¾	.13	.....	.13	.14	.13	.13¾	12¾	.13	.12¾	.13	21,500
Alamo	1	.13⅜	.14	.13¾	.14	.13⅜	.14	.13⅛	.14	.13⅝	.14	.13½	.14	23,000
Am. Con	1	.04	.05¼	.....	.....	.....	.....	.05	.05¼	.....	.....	.....	.....	.....
Anaconda	1	.39⅞	.40	.39⅝	.45	.39½	.....	.39½	.41	.39¾	.41	.40	.40½	1,000
Anchor	1	.01¾	.02	.....	.02	.01⅝	.02	.01¼	.01⅞	.02⅛	.02⅜	.01½	.02	.....
Anchoria L	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Antelope	1	.01⅝	.02	.01⅝	.02	.01⅝	.02	.01⅛	.02	.04	.....	.01⅝	.02	3,000
Aola	1	.03½	.03¾	.03½	.....	.03⅞	.04	.04	.....	.....	.....	.01¼	.....	7,000
Arcadian	1	.....	.08	.....	.08	.....	.04	.....	.....	.....	.04	.....	.04	.....
Arg'ntum J	1	.24⅛	.....	.26⅛	.26¾	.....	.27	.24⅛	.25½	.23¾	.24⅛	.21⅝	.21¾	55,900
Banner	1	.02⅜	.02⅝	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝	.02⅜	.02⅝	7,000
Battle Mt.C	1	.21½	.22	.21¾	.22¼	.21¾	.22	.21	.22	.....	.....	.20	.21	7 000
Ben Hur	1	.....	.....	.08	.09½	.09	.11	.08	.08⅜	.08½	.08⅝	.08	.09½	7,600
Black Bell	1	.10	.11	.10	.12	.10	.11½	.10	.11	.....	.....	.10	.12	1,000
Blue Bell	1	.15¾	.17	.16	.....	.16⅜	.16¾	.15⅜	.15¾	.16⅞	.17	.16⅞	.17½	3,000
Bob Lee	1	.05	.05¼	.04⅞	.05¼	.04⅞	.....	.04⅝	.05	.04½	.....	.04½	.....	8,000
Buckhorn	1	.03⅞	.04	.03⅞	.04	.03⅝	.04	.03¼	.04	.....	.04½	.03⅞	.....	3,000
Cadillac	1	.01⅞	.02⅜	.02	.02½	.01⅞	.02½	.01⅞	.....	.....	.....	.01⅞	.02¼	9,000
Central C'n	1	.08¾	.09	.08¼	.08½	.08¼	.08⅜	.08	.08¼	.08¼	.08¾	.07⅝	.09½	8?,000
Champion	1	.05¼	.05½	.05¼	.05⅝	.06	.06½	.05¾	.06	.05¼	.06¼	.05½	.06	5,000
Chicolo	1	.02¾	.03	.02⅝	.02½	.02¾	.02⅞	.02¼	.02⅞	.02¾	.02⅞	.02¾	.02¾	2,000
C. K. & N	1	.02⅜	.....	.02¼	.02⅝	.02¼	.02½	.02¼	.02⅜	.02¼	.02⅜	.02¼	.02⅜	17,000
C. C.Col'bia	1	.14½	.14⅝	.14	.15	.14⅜	.14⅝	.14¼	.15	.14	.....	.14⅜	.14⅝	39,000
C. C. G. Ext	1	.08	.10	.08	.12½	.08	.10⅛	.08	.08¼	.07⅛	.09	.07½	.09	11,000
C. C. & Man	1	.07⅜	.07½	.07¼	.07½	.07¼	.07½	.07¼	.07⅝	.07⅜	.07⅝	.07⅜	.07½	5,000
Copper Mt.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Creede& CC	1	.07	.08	.07¼	.07¾	.07¼	.07⅝	.....	.08	.07	.08	.....	.08	.....
C. C. Con	1	.09	.09¼	.09	.09½	.08½	.09	.08⅜	.09	.08	.09¼	.07¾	.08	17,500
Dante	1	.06½	.06⅝	.06½	.06⅞	.06	.06⅝	.06	.06⅜	.06½	.06⅝	.06	.06½	4,100
Des Moines	1	.09½	.03⅞	.....	.....	.05½	.06	.05½	.05¾	.05½	.05¾	.05½	.....	.....
Eclipse	1	.08¾	.09	.10	.10¾	.11⅛	.11¼	.11¼	.11⅜	.11⅛	.12	.12	.12¼	245,000
Elkton Con	1	1.65	1.66	1.67½	1.68½	1.69	1.70	1.66½	1.67	1.67	1.67½	1.65	1.67½	21,702
El Paso G	1	.....	.40	.....	.38	.38¾	.39¼	.....	.....	.35	.....	.35	.....	9,575
Enterprise	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
F. Rawlings	1	.....	.20	.25	.30½	.....	.50	.22	.30	.....	.....	.20	.30	4,000
Findley	1	.....	.....	.12⅜	.....	.12	.....	.10	.....	.12	.12½	.12	.....	2,000
Garf. Conn.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Golden El	1	.35	.....	.40	.44	.....	.....	.33	.40	.....	.41	.....	.41	2,500
Gold Hill	1	.....	.02	.01½	.02	.01⅜	.02	.01⅜	.02	.01⅛	.01⅜	.01½	.01¾	11,000
Gold Sov'n	1	.05	.06¼	.05	.06¼	.05½	.....	.05⅜	.06¼	.05½	.06¼	.05¾	.06¼	8,100
Hayden	1	.0⁻9⅜	.....	.....	.....	.....	.....	.....	.....	.01½	.02	.....	.....	2,000
Humboldt	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ida May	⅛	.15	.....	.15	.18½	.17	.18	.17	.18	.17	.18	.17	.18	1,000
Ing. Con	⅛	.19½	.20	.19½	.20	.19⅜	.....	.19	.20	.19¼	.20	.13½	.19¾	28,023
Ironclad	1	.06⅜	.06⅝	.06½	.06⅜	.06½	.....	.06¼	.06⅝	.05⅝	.06¼	.06¼	.06⅜	1,000
Isabella	1	.67¼	.69	.67¼	.69	.67	.69¾	.67¼	.68	.65½	.66¼	.65	.65¼	11,500
Jack Pot	⅛	.53	.55	.52	.55	.52	.53⅛	.50	.53	.50	.53	.52	.50¼	2,000
Josephine	1	.01¼	.01¾	.01½	.01½	.02½	.02¾	.01¼	.01⅜	.01¼	.01⅜	.01¼	.01⅝	7,000
Key West	1	.....	.02	.....	.02	.01½	.02	.01½	.02	.01½	.02	.....	.02	6,000
Lexington	1	.07⅛	.07¼	.07	.07¼	.07⅛	.07¾	.09	.09¼	.08¼	.08¾	.07⅛	.08	68,000
Magnet R	1	.02⅞	.03	.02⅞	.03⅛	.02⅞	.03	.02⅞	.03	.02¾	.02⅞	.02⅝	.03	5,000
Margaret	1	.01¼	.01½	.01½	.02	.01⅛	.02	.01⅜	.....	.01¼	.....	.....	.01⅝	2,000
Margery	1	.02	.02½	.02	.02½	.02	.06	.02	.02½	.02	.02½	.02	.02½	.....
Matoa	1	.....	.17	.....	.....	.....	.....	.....	.....	.10	.17	.10	.17	.....
Midway	1	.....	.....	.03	.03¼	.03⅛	.03¼	.03	.....	.03	.03⅜	.03	.03⅝	1,000
M. J. T	1	.02¼	.02⅝	.02¼	.02⅝	.02¼	.02⅝	.02¾	.02¾	.02¼	.02⅜	.02¼	.02⅝	.....
Moll.	1	.02¼	.02⅝	.02¼	.02⅝	.02¼	.02¾	.02¼	.02⅝	.....	.....	.02	.02⅝	1,000
Moll.Dwyer	1	.04⅝	.04⅞	.....	.05¾	.....	.04¾	.04	.04⅝	.03⅞	.04¼	.03⅞	.04¼	12,000
Mollie Gib.	1	.23½	.26	.25	.26	.25¾	.....	.26	.27⅜	.29½	.....	.27	.30	12,042
Monarch	1	.04⅛	.05	.04¾	.05	.04¾	.05	.04¾	.05	.04¾	.05	.....	.....	.....
Montreal	1	.03	.04	.03	.04	.03	.04	.03	.04	.....	.....	.03	.04	.....
Moon-A'c'r	1	.29½	.30	.29½	.30	.29	.30	.....	.29½	.28	.30	.23	.04	1,000
Morning S	1	.02⅞	.03⅛	.03	.03⅛	.03	.03¾	.03	.03¼	.02⅞	.03⅛	.02⅞	.03¼	.....
Mtn.Beauty	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mt. Rosa	1	.30	.....	.30	.....	.30	.....	.30	.....	.30	.....	.....	.....	500
National	1	.04	.04⅜	.....	.04¼	.....	.04	.....	.04	.03¾	.04	.03⅝	.03⅞	4,000
Nellie V	1	.04½	.04½	.04¼	.....	.04¼	.04⅝	.04⅞	.05	.....	.05	.04¾	.05	10,000
New Haven	1	.06⅜	.07	.06¼	.07	.06¼	.06¾	.06¼	.06⅝	.06¼	.06⅜	.05⅝	.....	6,600
Olive B'nch	1	.03½	.03⅝	.03	.03½	.03½	.04	.03½	.03¾	.03½	.03¾	.03½	.03¾	2,000
Ophir	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oriole	1	.02½	.02¾	.....	.03	.02¾	.03	.02¾	.02⅞	.02¾	.03	.02¾	.03	6,000
Orphan	1	.13	.....	.....	.16	.....	.16	.15¾	.15½	.....	.15	.14	.....	1,000
Pelican	1	.....	.02	.....	.02	.01¾	.02	.....	.02	.....	.02½	.....	.02	2,000
Pharmacist	1	.09¾	.10	.09¾	.10	.09⅝	.10	.09⅝	.09⅞	.09⅝	.09⅞	.09	.09¾	61,000
Pilgrim	1	.07	.07⅜	.07	.07⅜	.07	.07⅛	.07	.07¼	.07	.07½	.07	.07⅜	2,000
Pinnacle	1	.10	.....	.10⅛	.10⅞	.10	.11	.....	.11¼	.10	.11	.10	.11	3,000
Portland	1	3.00	3.03	3.01	3.03	3.01	3.03	3.01	3.03	3.01	3.03	3.01	3.03	3,200
Prince Alb.	1	04	.04⅛	.04

STOCK QUOTATIONS.

LONDON.

April 26.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
American:			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska Goldfields, g	Alaska	£300,000	1 0 0	2 3	Jan., 1901	16 3	18 9
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	Apr., 1901	4 17 6	5 2 6
*Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	" "	10 0 0	10 5 0
British Am. Corp	British Col'mbia	1,500,000	1 0 0	2 0	Mar., 1900	5 0	5 3
Copiapo, c	Chile	200,000	2 0 0	3 4	Dec., 1900	3 11 3	3 13 9
De Lamar, g., s	Idaho	400,000	1 0 0	1 0	May, 1901	4 0	5 0
El Oro, g	Mexico	1,000,000	1 0 0	1 0	Feb., 1901	1 6 8	1 8 9
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	1 17 6	2 0 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Jan., 1900	5 0	7 6
Hall Mg. & Sm., c., s	British Col.	325,000	1 0 0	.....		8 0	9 0
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	9 3 9	9 6 3
Le Roi No. 2, g	" "	120,000	5 0 0	.....		5 10 0	5 15 0
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	2 6	7 6
Montana, g., s	Montana	680,000	1 0 0	6	Apr., 1899	2 9	3 3
*Mountain Copper	California	1,250,000	5 0 0	7 0	Apr., 1901	4 10 0	4 15 0
*Stratton's Independence	Colorado	1,100,000	1 0 0	9	" "	1 11 3	1 13 9
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Dec., 1900	1 0 0	1 2 6
Utah Con., g. (Highl'nd Boy)	Utah	300,000	1 0 0	5 0	Apr., 1901	5 17 6	7 2 6
Ymir, g	British Col'mbia	200,000	1 0 0	1 0	Jan., 1901	1 13 9	1 16 3
European:							
Linares, l	Spain	45,000	3 0 0	7 0	Mar., 1901	6 0 0	7 0 0
Mason & Barry, c., sul	Portugal	420,000	2 0 0	£1	" "	4 6 0	4 5 0
Rio Tinto, c	Spain	1,625,000	5 0 0	£2	Nov., 1900	59 7 6	59 12 6
" " pref	"	1,625,000	5 0 0	2 6	" "	6 2 6	6 3 0
Tharsis, c	"	1,250,000	2 0 0	15 0	Apr., 1900	7 5 0	7 10 0
Australian:							
Assoc. Gold Mines	W. Australia	800,000	1 0 0	1 6	Jan., 1900	2 15 0	2 17 6
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 0	May, 1901	2 5 0	2 6 0
Great Boulder Prop.	W. Australia	175,000	2 0	6	Feb., 1901	1 6 3	1 6 9
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	Oct., 1900	4 8 9	4 11 3
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	Nov., 1900	9 5 0	9 7 6
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	4 6 3	4 8 9
Lake View Consols, g	"	250,000	1 0 0	5 0	Aug., 1900	9 10 0	9 12 6
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	2 0	Apr., 1901	4 17 6	5 2 6
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Apr., 1901	4 15 0	5 0 0
Waihi g	New Zealand	330,000	1 0 0	2 6	Mar., 1901	8 7 6	8 10 0
Indian:							
Champion Reef, g	Colar Fields	220,000	10 0	4 0	May, 1901	6 2 6	6 5 0
Mysore Gold, g	"	256,300	10 0	rts.	Dec., 1900	5 17 6	6 0 0
Nundyroog, g	"	242,000	1 0 0	2 9	Mar., 1901	4 11 3	4 13 9
*Ooregum, g	"	145,000	1 0 0	4 0	Apr., 1901	5 7 6	5 10 0
" pref. g	"	120,000	1 0 0	4 0	" "	6 3 9	6 6 3
African:							
British S. Africa, chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 8 9	3 11 3
Cape Copper, c	"	600,000	1 0 0	5 0	Jan., 1901	5 7 6	5 12 6
" " pref	"	150,000	2 0 0	5 0	" "	5 0 0	5 10 0
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	5 12 6	5 17 6
Con. Deep Level, g	"	200,000	1 0 0	x all	June, 1898	1 2 6	1 7 6
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	14 10 0	15 0 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Jan., 1901	3a 10 0	34 15 0
Ferreira, g	Transvaal	90,000	1 0 0	30 0	Aug., 1899	21 5 0	21 15 0
Geldenhuis Deep, g	"	330,000	1 0 0	8 0	" "	10 7 6	10 12 6
Geldenhuis Est., g	"	200,000	1 0 0	10 0	" "	6 13 9	6 16 3
Henry Nourse, g	"	125,000	1 0 0	10 0	Apr., 1900	8 10 0	8 15 0
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	6 0	Dec., 1900	18 10 0	19 10 0
Johannesburg Con. Invet.	So. Africa	2,750,000	1 0 0	2 0	Aug., 1899	2 2 6	2 5 0
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	6 0 0	6 10 0
Langlaagte Estate, g	"	470,000	1 0 0	3 0	Sept., 1899	3 7 6	3 16 0
May Con., g	"	200,000	1 0 0	6 0	Aug., 1899	4 7 6	4 10 0
Meyer & Charlton, g	"	100,000	1 0 0	8 0	July 1899	5 7 6	5 12 6
Namaqua, c	Cape Colony	300,000	2 0 0	4 0	Dec., 1900	5 7 6	5 12 6
Primrose (New), g	Transvaal	340,000	1 0 0	6 0	Aug., 1899	4 5 0	4 7 6
Rand Mines, g	So. Africa	490,000	1 0 0	15 0	" "	42 7 6	42 12 6
Robinson, g	Transvaal	2,750,000	5 0 0	8 0		9 12 6	9 17 6
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 1 3	1 2 6
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	6 5 0	6 7 6
Wolhuter, g	"	850,000	4 0 0	2 0	Feb., 1899	4 10 0	4 15 0

C, copper. D, diamonds. G, gold. L, lead. S, silver. * Ex-Dividend.

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	Apr. 29 B.	Apr. 29 A.	Apr. 30. B.	Apr. 30. A.	May 1. B.	May 1. A.	May 2. B.	May 2. A.	May 3. B.	May 3. A.	May 4. B.	May 4. A.	Sales.
Acacia	1	.12⅞	.13¼	.13	.13½	.13	.....	.....	.....	.13	.13¼	.12¾	.13⅛	13,000
Alamo	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anaconda	1	.....	.....	.39½	.40⅜	.39⅞	.40⅝	.....	.....	.39½	.....	.40	.40⅜	3,200
Arg. J	1	.25⅛	.27½	.26	.....	.....	.....	.....	.....	.25½	.....	.21¼	.....	4,000
Dictator	1	.01⅞	.01½	.01⅞	.01½	.01⅞	.01⅝	.....	.....	.01½	.....	.01⅞	.01⅝	19,000
Elkton	1	.....	.....	1.66	1.66½	.....	1.74	.....	.....	1.65½	.....	.....	.....	.....
Ironclad	1	.06⅛	.03¼	.06	.06¼	.06	.06⅜	.....	.....	.06⅛	.06⅜	.06⅛	.06⅛	19,000
Isabella	1	.....	.....	.....	.68½	.....	.....	.....	.....	.....	.....	.....	.....	.....
Josephine	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Magnet R.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
National	1	.04¾	.04⅛	.04	.04¼	.03⅞	.04	.....	.....	.03¾	.04	.....	.04⅛	22,000
New Haven	1	.05	.06⅞	.03½	.06¾	.....	.....	.....	.....	.....	.....	.....	.....	.....
Reno	1	.....	.....	.02¾	.03	.02½	.05	.....	.....	.02¾	.03	.02½	.....	7,500
Republic	1	.06	.06½	.06⅜	.05⅝	.....	.....	.....	.....	.....	.....	.....	.....	7,000

‡ Official Quotations Denver Stock Exchange. Total sales, 84,700 shares.

SPOKANE, WASH.

Week May 3.

NAME OF COMPANY.	Par val.	B.	A.	Sales.	NAME OF COMPANY.	Par val.	B.	A.	Sales.
Crystal	....	.03	.04¾	.....	Mountain Lion	$1	.15	.23	7,000
Deer Trail Con	$1	.00¾	.02⅝	.....	Princess Maud	0.10	.01½	.02	13,250
Evening Star	1	.03	.05	.....	Quilp	1	.22	.32½	.....
Gold Ledge	....	.01⅝	.01⅞	56,000	Rambler Cariboo	0.25	.17	.25½	.....
Jim Blaine	1	.....	.....	.....	Reservation	....	.02¼	.04⅜	1,000
Lone Pine-Surp. Con	1	.06¾	.07	17,000	Sullivan	....	.08	.08⅜	.....
Morning Glory	0.10	.03½	.05½	13,500	Tom Thumb	....	.11	.12	3,000

PARIS.

April 18.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	85.00	1,815.00	1,815.00
" " Firminy	"	" "	3,000,000	500	175.00	8,194.00	3,200.00
" " Fives-Lille	"	" "	12,000,000	500	.....	462.00	462.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	3,440.00	3,500.00
" " la Marine	France	Steel mfrs	20,000,000	500	60.00	1,510.00	1,497.00
Anzin	"	Coal	.....	.....	.....	360.00	5,550.00	5,580.00
Boleo	Lower Cal.	Copper	.....	.....	.....	500	176.00	2,675.00	2,640.00
Briansk	Russia	Coal & iron	.....	500	.....	609.00	617 00
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	36.00	35.75
Courrieres	France	Coal	600,000	300	90.00	2,325.00	2,450.00
Dombrowa	Russia	"	.....	500	75.00	980.00	985.00
Dynamite Centrale	France	Explosives	.....	500	22.50	490.00	440.00
Escombrera-Bleyberg	Spain	Lead	.....	500	70.00	935.00	920.50
Fraser River	Brit. Col'mb.	Gold	250,000	25	.....	6.00	6.00
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	137.50	147.50
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	440.00	425.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	665.00	630.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	10.00	470.00	476.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	85.00	910.00	909.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	608.00	610.00
Napthe Nobel	"	"	.....	.....	.....	532.50	527.50
" " parts	"	"	.....	.....	.....	10,650.00	10,559.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	17.50	520.00	510.00
Penarroya	Spain	Coal, etc	.....	500	100.00	1,175.00	1,150.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	1.75	1.75
Salines de l'Est	France	Salt	.....	500	5.00	225.00	220.00
Salines du Midi	"	"	.....	500	25.00	860.00	860.00
Vielle Montagne	Belgium	Zinc	9 000,000	80	36.00	620.00	612.00

DIVIDENDS.—(*Continued.*)

COAL, IRON, OIL, AND INDUSTRIAL COMPANIES.

Number.	Name and Location of Company.		Authorized Capital Stock.	Shares. Issued.	Shares. Par Val	Dividends. Paid, 1901.	Dividends. Total to Date.	Dividends. Latest. Date.	Dividends. Latest. Amt.
1	Alabama Coal & Iron, pf	Ala.	$2,500,000	25,000	$100	$43,750	$262,500	Mar.. 1901	1.75
2	Altoona Coal & Coke	Pa.	2,500,000	250 000	10	75,000	75,000	Jan.. 1901	.30
3	Am. Agricul. Chem., pf.	U. S.	20,000,000	170,449	100	510,000	2,040,000	Apr.. 1901	3.00
4	American Cement	Pa.	2,106,000	200,000	10	80,000	220,000	Jan.. 1901	.40
5	American Coal	Md.	1,500,000	60,000	25	75,000	1,057,500	Mar.. 1901	1.25
6	Am. Fuel Oil	Cal.	100,000	100,000	1	1,000	15,000	Jan.. 1901	.01
7	Am. Iron & Steel, com.	Pa.	17,000,000	34,000	50	8,500	42,500	Jan.. 1901	.25
8	Am. Iron & Steel, pf	Pa.	3,000,000	60,000	50	37,500	237,480	Jan.. 1901	.62½
9	Am. Sheet Steel, pf.	U. S.	26,000,000	245,000	100	857,500	857,500	Apr.. 1901	1.75
10	Am. Steel Hoop, pf	U. S.	14,000,000	140,000	100	490,000	1,715,000	Apr.. 1901	1.75
11	Am. Steel & Wire, com.	U. S.	50,000,000	500,000	100	1,500,000	4,125,000	Apr.. 1901	1.25
12	Am. Steel & Wire, pf	U. S.	40,000,000	400,000	100	1,400,000	7,000,000	Apr.. 1901	1.75
13	Arizona Western Oil	Cal.	100,000	100,000	1	8,000	14,000	Apr.. 1901	.02
14	Bethlehem Steel	Pa.	15,000,000	300,000	50	300,000	1,200,000	June. 1901	.50
15	Buckhorn Oil	Cal.	200,000	16,000	10	.....	3,800	Mar.. 1900	.05
16	Burlington Oil	Cal.	60,000	60,000	1	600	4,200	Jan.. 1901	.01
17	California Oil & Gas	Cal.	2,000,000	200,000	10	250,000	250,000	Jan.. 1901	1.25
18	Cambria Iron	Pa.	10,000,000	169,320	50	169,320	846,600	Apr.. 1901	1.00
19	Cambria Steel	Pa.	16,000,000	320,000	50	320,000	1,920,000	May.. 1901	.50
20	Central Oil	W. Va	1,500,000	60,000	25	25,000	67,500	May.. 1901	.37½
21	Central Oil	Cal.	750,000	662,800	1	39,768	112,676	Apr.. 1901	.03
22	Central Point Con. Oil	Cal.	200,000	190,000	1	11,400	19,000	May.. 1901	.02
23	Colo. Fuel & Iron, pf	Colo.	2,000,000	20,000	100	80,000	1,240,000	Feb.. 1901	4.00
24	Consolidation Coal	Md.	10,250,000	102,500	100	205,000	5,318,000	Feb.. 1901	2.00
25	Continental Oil	Cal.	300,000	240,000	1	7,200	7,200	Apr.. 1901	.03
26	Crucible Steel, pf	U. S.	25,000,000	250,000	100	426,991	853,982	Mar.. 1901	1.75
27	Dabney Oil	Cal.	1,000,000	1,000,000	1	10,000	10,000	May.. 1901	.01
28	Diamond Star Oil	Cal.	250,000	100,000	1	.....	6,250	Nov.. 1900	.02
29	Diamond State Steel	Del.	3,000,000	150,000	10	60,000	160,000	Jan.. 1901	.40
30	Empire Steel & Iron, pf.	U. S.	5,000,000	23,700	100	35,550	213,300	Jan.. 1901	1.50
31	Federal Steel, com	U. S.	100000,000	464,843	100	2,324,215	4,067,377	Feb.. 1901	5.00
32	Federal Steel, pf	U. S.	100000,000	532,609	100	1,597,828	8,255,482	Apr.. 1901	1.50
33	Flat Top C. L. Ass'n, com	Va.	5,000,000	37,141	100	74,282	352,840	May.. 1901	1.00
34	Flat Top C. L. Ass'n, pf.	Va.	5,060,000	37,141	100	74,282	2,024,168	May.. 1901	1.00
35	Four Oil	Cal.	300,000	300,000	1	9,000	9,000	Apr.. 1901	.01
36	General Chem., com	U. S.	12,500,000	71,679	100	71,679	485,945	Mar.. 1901	1.00
37	General Chem., pf	U. S.	12,500,000	82,600	100	247,800	1,013,678	Apr.. 1901	1.50
38	Globe Oil	Cal.	600,000	600,000	1	3,000	3,000	Apr.. 1901	.00½
39	Gray Eagle Oil	Cal.	250,000	100,000	2½	50,000	170,000	Jan.. 1901	.50
40	Great Western Oil	Cal.	100,000	10,000	10	.....	10,000	Oct.. 1900	.10
41	Home Oil	Cal.	100,000	100,000	1	40,000	240,000	Apr.. 1901	.10
42	Homestake Oil	Cal.	100,000	10,000	10	4,000	27,000	Mar.. 1901	.20
43	Jefferson&Clearf. C'l, cm	Pa.	1,500,000	15,000	100	.....	30,000	Aug.. 1900	2.00
44	Jefferson&Clearf. C'l, pf.	Pa.	1,500,000	15,000	100	37,500	225,000	Feb.. 1901	2.50
45	Kern Oil	Cal.	100,000	100,000	1	25,000	375,000	Jan.. 1901	.25
46	Lehigh Coal & Nav	Pa.	14,346,650	286,933	50	.....	18,516,990	Oct.. 1900	1.50
47	Maryland Coal, pf.	Md.	1,885,005	18,850	100	.....	640,869	Dec.. 1900	3.00
48	Monongahela R. Coal, pf	Pa.	10,00),000	200,000	50	350,000	700,000	Jan.. 1901	1.75
49	Montana Coal & Coke	Mont.	5,000,000	200,000	25	.....	120,000	Oct.. 1900	.30
50	National Salt, com	U. S.	7,000,000	70,000	100	210,000	405,000	May.. 1901	1.50
51	National Salt, pf	U. S.	5,000,000	50,000	100	175,000	700,000	May.. 1901	1.75
52	National Steel, pf	U. S.	27,000,000	270,000	100	472,500	3,780,000	Mar.. 1901	1.75
53	National Tube, com	U. S.	40,000,000	398,604	100	1,195,812	2,391,624	May.. 1901	1.50
54	National Tube, pf	U. S.	40,000,000	399,963	100	1,399,870	4,899,546	Apr.. 1901	1.75
55	New Central Coal	Md.	1,000,000	50,000	20	.....	510,000	Nov.. 1900	.40
56	New Haven Iron & Steel	Conn.	500,000	100,000	$5	$22,500	$117,500	Apr.. 1901	.10
57	Oceanic Oil	Cal.	$100,000	100,000	1	.....	2,000	Dec.. 1900	.01
58	Ohio & Ind. Nat. Gas	U. S.	10,000,000	90,000	100	90,000	450,000	Mar.. 1901	1.00
59	Pacific Coast Borax	Cal.	2,000,000	19,000	100	76,000	838.500	Apr.. 1901	1.00
60	Park Crude Oil	Cal.	100,000	82,146	1	.....	4,897	Sept.. 1900	.01
61	Pennsylvania Coal	Pa.	5,000,000	100,000	50	.....	19,700,000	Nov.. 1900	2.00
62	Pennsylvania Salt Mfg.	Pa.	5,000,000	100,000	50	150,000	12,700,000	Apr.. 1901	3.00
63	Pennsylvania Steel, pf.	Pa.	25,000,000	250,000	100	52,500	183,750	Apr.. 1901	1.75
64	Phila. Gas, com	Pa.	14,752,131	295,042	50	405,684	1,143,292	Apr.. 1901	.75
65	Phila. Gas, pf	Pa.	3,998,350	79,967	50	99,959	299,877	Mar.. 1901	1.25
66	Pittsburg Coal., pf	Pa.	32,000,000	320,000	100	1,120,000	3,360,000	Apr.. 1901	1.75
67	Producers' & Con. Oil	Cal.	1,000,000	10,000	100	4,000	57,000	Mar.. 1901	.10
68	Republic Iron & Steel, pf	U. S.	25,000,000	203,069	100	710,742	2,487,596	April. 1901	1.75
69	Rex Oil	Cal.	500,000	85,000	5	.....	26,000	Oct.. 1900	.03
70	San Joaquin Oil	Cal.	100,000	100,000	1	10,000	10,000	Jan.. 1901	.10
71	Shawmut Oil	W. Va	1,250,000	50,000	25	50,000	50,000	May.. 1901	.50
72	Shelby Iron	Ala.	1,000,000	10,000	100	50,000	300,000	May.. 1901	5.00
73	Sloss-Sheffield Ir.&St., pf	U. S.	20,000,000	67,000	100	231,250	573,250	Apr.. 1901	1.75
74	So. Cal. Oil & Fuel	Cal.	300,000	200,000	1	15,000	21,000	Apr.. 1901	.01½
75	Standard Oil (of N. J.)	U. S.	100000,000	975,000	100	19,500,000	92,625,000	Mar.. 1901	20.00
76	Sunday Lake Iron	Mich.	1,000,000	40,000	25	40,000	40,000	Feb.. 1901	1.00
77	Susquehanna I. & S., pf.	Pa.	1,500,000	300,000	5	22,500	537,500	Jan.. 1901	.07½
78	Tenn. Coal, I. &R.R., com	Tenn.	23,000,000	225,536	100	.....	1,102,144	Nov.. 1900	2.00
79	Tenn. Coal, Ir. & R.R., pf	Tenn.	248,000	2,480	100	9,920	252,960	May.. 1901	2.00
80	Texas & Pacific Coal	Tex.	2,000,000	20,000	100	60,000	1,860,000	Apr.. 1901	1.50
81	United States Crude Oil	Cal.	100,000	10,000	1	.....	3,200	Dec.. 1900	.03
82	United States Marble	Wash	2,000,000	2,000,000	1	8,750	8,750	Apr.. 1901	.00¼
83	United States Oil	W. Va	2,500,000	100,000	25	.....	744,250	Oct.. 1900	.50
84	Va.-Carolina Chem., com	U. S.	12,000,000	120,000	100	120,000	1,650,000	Mar.. 1901	1.00
85	Va.-Carolina Chem., pf.	U. S.	12,000,000	120,000	100	440,000	4,640,000	Apr.. 1901	2.00
86	Warwick Iron & Steel	Pa.	1,500,000	14,133	100	.....	158,597	Nv.. 1900	2.00
87	West Lake Oil	Cal.	500,000	500,000	1	.....	50,000	Sept.. 1900	.01
88	Westmoreland Coal	Pa.	5,000,000	250,000	50	.....	750,000	Oct.. 1900	1.50
89	Yukon Oil	Cal.	2,500,000	100,000	2½	.....	21,000	Oct.. 1900	.02

This table is corrected up to May 1st. Correspondents are requested to forward changes or additions.

DIVIDENDS.

GOLD, SILVER, COPPER, ZINC, LEAD AND QUICKSILVER COMPANIES.

Number.	Name and Location of Company.		Authorized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.	Amt.
1	Acacia, g.	Colo.	$1,500,000	1,500,000	$1	.....	$45,000	Dec.. 1900	.01
2	Adams, s.l.c.	Colo.	1,500,000	150,000	10	$7,500	708,500	Apr.. 1901	.05
3	Ætna Con., q.	Cal..	500,000	100,000	5	.....	225,000	Apr.. 1900	.15
4	Alaska Goldfields	Alask	1,500,000	250,000	5	127,500	252,500	Jan.. 1901	.51
5	Alaska-Mexican, g.	Alask	1,000,000	180,000	5	36,000	537,031	Apr.. 1901	.10
6	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	150,000	4,670,000	Apr.. 1901	.37½
7	Alice, g. s.	Mont.	10,000,000	400,000	25	.....	1,875,000	Apr.. 1898	.05
8	Alliance, g.	Colo..	500,000	500,000	1	.....	47,500	Nov.. 1899	.07
9	Amalgamated, c.	Mont.	75,000,000	750,000	100	3,000,000	10,500,000	Apr.. 1901	2.00
10	Amanda, g.	Colo..	1,000,000	1,000,000	1	.....	10,000	June.. 1900	.01
11	Amazon, g.	Colo..	600,000	600,000	1	.....	121,882	May.. 1900	.10
12	American, g.	Colo..	3,000,000	300,000	10	.....	446,000	Dec.. 1899	.07
13	Amer. Sm. & Ref., pref.	U. S..	50,000,000	500,000	100	959,000	3,641,553	Apr.. 1901	1.75
14	Am. Zinc, Lead & Sm.	Mo...	2,500,000	60,000	25	.....	180,000	Jan.. 1900	1.00
15	Anaconda, c.	Mont.	30,000,000	1,200,000	25	2,400,000	19,350,000	Apr.. 1901	2.00
16	Anchoria-Leland, g.	Colo..	600,000	600,000	1	.....	198,000	Apr.. 1899	.03
17	Anglo-Mexican, g.	Mex..	2,001,625	400,230	25	.....	1,825,048	Dec.. 1899	.24
18	Appie Ellen, g.	Colo..	600,000	600,000	1	.....	25,000	Nov.. 1898	.04
19	Apollo Con., g.	Alask	1,000,000	100,000	10	.....	210,000	Jan.. 1900	.07
20	April Fool, g.	Nev..	500,000	500,000	1	.....	16,000	Oct... 1899	.03
21	Argonaut, g.	Cal..	2,000,000	200,000	10	.....	490,000	May.. 1900	.05
22	Arizona, c.	Ariz..	3,190,550	.....	.....	421,158	1,886,001	Mar.. 1901	1.32
23	Arlington, s. l.	B. C..	1,000,000	1,000,000	1	20,000	20,000	Mar.. 1901	.02
24	Associated, g.	Colo..	1,250,000	1,250,000	1	.....	84,000	Feb.. 1899	.01
25	Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	880,000	Feb.. 1901	2.00
26	Bald Butte, g. s.	Mont.	250,000	250,000	1	75,000	997,148	May.. 1901	.06
27	Bankok-Cora Belle, g.	Colo..	600,000	600,000	1	.....	107,510	July.. 1896	.01
28	Big Seven, g.	Cal..	100 000	100,000	1	.....	6,000	Apr... 1898	.03
29	Big Six, g. s. l.	Colo..	500,000	500,000	1	.....	15,000	May.. 1898	.00½
30	Boston, q.	Cal..	1,000,000	100,000	10	.....	20,000	Jan.. 1900	.10
31	Boston-Aurora, pref.	Mo...	800,000	32,000	25	.....	66,160	May.. 1900	.50
32	Boston & California, g.	Cal...	600,000	600,000	1	.....	72,000	June.. 1899	.06
33	Boston & Colo. Smelting	Colo..	750,000	15,000	50	22,500	337,600	Apr.. 1901	.75
34	Boston Duenweg, z.	Mo...	1,000,000	40,000	10	.....	56,900	June.. 1900	.10
35	Boston Get There, z.	Mo...	250,000	22,500	10	.....	20,250	Apr.. 1900	.10
36	Boston Gold-Copper Sm.	Colo..	1,000,000	1,000,000	1	50,000	100,000	May.. 1901	.02½
37	Boston&Mont.Con.,c.s.g	Mont.	3,750,000	150,000	25	3,000,000	23,975,000	May.. 1901	10.00
38	Bosun, s. l.	B. C..	250,000	50,000	5	12,500	12,500	Apr.. 1901	.25
39	Breece, i. s.	Colo..	5,000,000	200,000	25	10,000	110,000	Feb.. 1901	.05
40	Buffalo Hump, g.	Idaho	1,000,000	100,000	10	25,000	300,000	Jan.. 1901	.10
41	Bull Hill Con., g.	Colo..	1,500,000	1,500,000	1	37,500	52,500	Mar.. 1901	.00½
42	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	.....	2,498,400	June.. 1900	.10
43	Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	105,000	1,158,000	May.. 1901	.07
44	Butte & Boston Con., c.	Mont.	2,000,000	200,000	10	.....	1,000,000	Dec.. 1900	5.00
45	Butterfly-Terrible, g.	Colo..	1,500,000	1,250,000	1	15,625	15,625	Apr.. 1901	.00¾
46	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	1,500,000	74,350,000	Apr.. 1901	15.00
47	Cariboo-McKinney, g.	B.Col	1,250,000	1,250,000	1	.....	478,087	Oct... 1900	.01½
48	Centen'l-Eureka, g.s.l.c.	Utah.	5,000,000	100,000	25	100,000	2,517,700	Apr.. 1901	.50
49	Center Creek, l. z.	Mo....	1,000,000	100,000	10	.....	40,000	Dec.. 1900	.20
50	Center Star, g.	B. C..	3,500,000	3,500,000	1	105,000	175,000	Apr.. 1901	.01
51	Central Eureka, g. s.	Cal...	4,000,000	400,000	10	20,000	20,000	Apr.. 1901	.05
52	Central Lead, l.	Mo...	1,000,000	10,000	100	20,000	227,000	Apr.. 1901	.50
53	Champion, g. s.	Cal...	340,000	34,000	10	.....	402,300	Dec.. 1899	.25
54	Cloverdale, z.	Mo...	1,000,000	100,000	10	.....	80,000	July.. 1900	.20
55	C. O. D., g.	Colo..	500,000	500,000	1	.....	25,000	Mar.. 1896	.01
56	Colonial, l.	Mo...	1,000,000	1,000,000	1	.....	10,000	Aug.. 1899	.01
57	Columbia, l.	Mo...	500,000	48,500	10	.....	12,125	June.. 1900	.05
58	Columbian Hyd., c.	C'l'm	375,000	75,000	5	.....	454,500	Jan.. 1899	.12
59	Commodore, g.	Colo..	1,200,000	1,200,000	1	.....	432,000	Jan .. 1899	.04
60	Commonwealth, z., pref.	Mo ..	500,000	100,000	5	.....	50,000	June.. 1900	.05
61	Consolidated Gold Mines	Colo..	1,000,000	1 000,000	1	30,000	160,000	Mar.. 1901	.01
62	Con. Mercer Gold Mines.	Utah.	5,000,000	1,000,000	5	125,000	1,716,000	May . 1901	.12½
63	Consolidated, z. l., pf.	Mo...	400,000	400,000	1	.....	8,000	Jan.. 1900	.20
64	Copiapo, c.	Chile.	1,000,000	100,000	10	.....	2,520,000	July.. 1899	1.44
65	Creede & Cripple C'k.,g.	Colo..	800,000	800,000	1	16,000	16,000	May . 1901	.02
66	Cripple Creek Con., g.	Colo..	2,000,000	2,000,000	1	.....	160,000	Mar .. 1900	.08
67	Crœsus, g.	Cal..	1,000,000	200,000	5	46,000	197,300	May . 1901	.05
68	Crowned King, g. s.	Ariz..	6,000,000	600,000	10	.....	242,760	May . 1899	.02
69	Dalton & Lark, g. s. l.	Utah.	2,500,000	2,500,000	1	.....	87,500	Mar .. 1896	.00½
70	Daly West, g.	Utah.	3,000,000	150,000	20	180,000	787,500	Apr.. 1901	.30
71	Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	.....	1,350,000	May . 1898	.15
72	Deer Trail Con., g.	Wash	3,000,000	3,000,000	1	.....	55,000	Dec.. 1899	.00½
73	De Lamar, g. s.	Idaho	2,000,000	400,000	5	96,000	2,490,000	May . 1901	.24
74	Della S., g. s.	Colo..	1,000,000	1,000,000	1	.....	60,000	Jan.. 1897	.01
75	Dewey Con., g.	Utah.	10,000	10,000	1	2,250	4,850	Feb.. 1901	.07½
76	Dixie, g.	Utah.	125,000	125,000	1	.....	10,000	Apr.. 1900	.02
77	Doctor-Jack Pot Con., g	Colo..	3,000,000	2,900,000	1	116,000	116,000	Apr.. 1901	.01
78	Doe Run, l.	Mo...	1,500,000	10,000	100	30,000	447,072	Apr.. 1901	1.50
79	Ducktown, c. i. sul. (ord)	Tenn.	374,000	7,480	50	.....	133,144	May.. 1900	5.00
80	Ducktown (founder).	Tenn.	1,000	200	5	.....	66,160	May.. 1900	125.00
81	Eldorado, g.	Cal..	1,000,000	100,000	10	.....	10,000	July.. 1899	.10
82	Elkton Con., g.	Colo..	3,000,000	2,500,000	1	75,000	1,054,461	Mar.. 1901	.03
83	El Oro. g. s.	Mex.	5,000,000	1,000,000	5	240,000	480,000	Feb.. 1901	.24
84	Empire State-Idaho, l.s.	Idaho	6.000.000	505.542	10	231,771	904,459	May . 1901	.10
85	Enterprise, g.	Colo..	500,000	500,000	1	.....	900,000	Sept.. 1898	.05
86	Fanny Rawlings, g.	Colo..	1,000,000	1,000,000	1	.....	20,000	Aug. 1899	.01
87	Fern, g.	B. C..	200,000	200,000	1	.....	10,000	Jan.. 1898	.05
88	Ferris-Haggarty, c.	Wyo.	1,000,000	1,000,000	1	.....	5,000	Mar.. 1899	.00½
89	Florence, s.	Mont.	2,500,000	400,000	5	.....	223,780	Mar.. 1901	.05
90	Frisco Con., l. s.	Idaho	2,500,000	500,000	5	.....	920,000	Nov.. 1899	.25
91	Frontino & Bolivia, c.	C'l'm	643,310	128,662	5	.....	1,109,066	Oct... 1899	.36
92	Galena, s. l. g.	Utah.	1,000,000	100,000	10	.....	71,000	Sept.. 1897	.05
93	Gemini	Utah.	500,000	5,000	100	.....	700,000	Aug.. 1900	10.00
94	Gold Belt, g.	Colo..	1,250,000	1,250,000	1	.....	112,500	Aug.. 1900	.09
95	Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1	120,000	720,000	Apr.. 1901	.03
96	Gold Deposit, g.	Colo..	500,000	500,000	1	.....	10,000	Mar.. 1900	.02
97	Gold & Globe, g.	Colo..	750,000	750,000	1	.....	51,625	July.. 1897	.00½
98	Gold King, g.	Colo..	1,000,000	936,850	1	28,106	206,107	Apr.. 1901	.03
99	Golden Cycle, g.	Colo..	1,000,000	200,000	5	30,000	408,500	Mar.. 1901	.05
100	Golden Eagle, g.	Colo..	500,000	500,000	1	5,000	30,000	Apr.. 1901	.01
101	Golden Fleece, g. s.	Colo..	600,000	600,000	1	.....	569,480	Feb.. 1897	.01
102	Golden Reward, g.	S. D..	1,000,000	100,000	10	.....	155,000	Feb.. 1898	.15
103	Grand Central, g. s.	Mex..	1,500,000	250,000	5	.....	840,000	Jan.. 1900	.48
104	Grand Central, g.	Utah.	250,000	250,000	1	.....	691,250	Nov.. 1900	.10
105	Grand Gulch, c.	Ariz..	250,000	240,000	1	.....	9,600	Apr.. 1900	.01
106	Grass Valley Expl.	Cal...	100,000	30,000	2	.....	30,000	Jan.. 1900	.25
107	Greater Gold Belt, g.	Colo..	5,000,000	3,800,000	1	.....	76,000	June.. 1900	.02
108	Gwin, g.	Cal.	1,000,000	100,000	10	55,000	206,500	Apr.. 1901	.15
109	Hall, c. s.	B. C..	1,625,000	267,609	5	.....	220,000	May.. 1899	.24
110	Hecla, l. s.	Idaho	250,000	1,000,000	¼	.....	100,000	Dec.. 1900	.02
111	Hecla Con., s. l.	Mont.	1,500,000	30,000	50	15,000	2,235,000	Feb.. 1901	.50
112	Helena, g.	Ore..	1,000,000	1,000,000	1	20,000	70,000	Apr.. 1901	.01
113	Hidden Treasure, g.	Cal...	360,000	36,000	10	.....	457,452	Sept.. 1900	.10
114	Holy Terror, g.	S. D..	500,000	500,000	1	.....	172,000	Jan.. 1900	.01
115	Home, g. (Leadville).	Colo..	2,000,000	2,000,000	1	37,500	137,500	Apr.. 1901	.25
116	Homestake, g.	S. D..	21,000,000	210,000	100	420,000	9,823,750	Apr.. 1901	.50
117	Horn-Silver, g. s. c.z. l.	Utah.	10,000,000	400,000	25	.....	5,270,000	June.. 1900	.05
118	Idaho, s. l.	B. C..	500,000	500,000	1	.....	292,000	Jan.. 1899	.05¾
119	Independence Con., g.	Colo..	2,500,000	2,500,000	1	181,375	281,375	Apr.. 1901	.04
120	Ingham Con., g.	Colo..	750,000	1,359,600	½	16,995	16,995	Apr.. 1901	.00¼
121	Iowa, g. s. l.	Colo..	1,666,667	1,666,667	1	16,667	153,500	Jan.. 1901	.01
122	Iron Mountain, g. s. l. l.	Mont.	5,000,000	500,000	10	.....	507,500	Apr... 1898	.02
123	Iron Silver.	Colo.	10,000,000	$500,000	$20	.....	$2,550,000	Dec.. 1900	.10
124	Isabella, g.	Colo..	2,250,000	2,250,000	1	$22,500	742,500	Mar.. 1901	.01
125	Jamison, g.	Cal...	3,900,000	390,000	10	.....	50,700	Apr... 1899	.10
126	Klondike Bonanza, g.	Klon.	750,000	52,750	5	.....	50,000	Aug.. 1899	.24
127	La Fortuna, g.	Ariz..	250,000	250,000	1	62,500	978,000	May . 1901	.05
128	Lake City, g.	Colo..	50,000	50,000	1	.....	3,875	May . 1900	.01
129	Last Chance, s. l.	B. C..	500,000	500,000	1	.....	45,000	Apr.. 1899	.05
130	Last Dollar, g.	Colo..	1,500,000	1,500,000	1	30,000	150,000	Feb.. 1901	.02
131	Le Roi, g.	B.Col	5,000,000	200,000	5	.....	1,305,000	Nov.. 1899	1.20
132	Lightner, g.	Cal...	125,000	102,255	1	7,669	17,892	Apr.. 1901	.05
133	Lillie, g.	Colo..	1,250,000	250,000	5	.....	349,183	Apr.. 1900	.05
134	Mammoth, g. s. c.	Utah	10,000,000	400,000	25	60,000	1,850,000	Apr.. 1901	.05
135	Marian Con., g. s. z, l. i.	Colo..	5,000,000	500,000	10	.....	202,000	Sept.. 1899	.01
136	Mary McKinney, g.	Colo..	1,000,000	1,000,000	1	60,000	240,000	Apr.. 1901	.03
137	Midget, g.	Colo..	1,000,000	1,000,000	1	.....	120,000	Dec.. 1900	.15
138	Modoc, g. s.	Colo..	500,000	500,000	1	20,000	225,000	Apr.. 1901	.01
139	Mollie Gibson, s. l.	Colo..	5,000,000	1,000,000	5	.....	4,080,000	Jan.. 1895	.05
140	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	.....	453,700	Apr.. 1899	.12
141	Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	480,000	2,080,000	Apr.. 1901	3.00
142	Montreal, g.	Colo..	1,000,000	750,000	1	.....	7,500	Nov.. 1898	.01
143	Monument, g.	Colo..	300,000	300,000	1	3,000	21,124	Feb.. 1901	.01
144	Moon-Anchor, g.	Colo..	1,750,000	350,000	5	.....	261,000	Nov.. 1898	.07½
145	Moose, g.	Colo..	600,000	600,000	1	.....	186,000	Feb.. 1896	.01
146	Morning Star Drift, g.	Cal...	240,000	2,400	100	.....	854,490	Sept.. 1900	3.00
147	Morse, g.	Colo..	1,250,000	1,250,000	1	.....	215,650	May . 1899	.12
148	Moulton, g.	Mont.	2,000,000	400,000	5	.....	500,000	Oct... 1899	.05
149	Mountain, c.	Cal ..	6.250,000	250,000	25	420,000	2,793,750	Apr.. 1901	1.68
150	Mt. Diablo, s.	Nev..	5,000,000	50,000	100	.....	260,271	Jan.. 1900	.10
151	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	75,000	Dec.. 1899	.04
152	Mt. Shasta, g.	Cal...	100,000	20,000	5	.....	6,000	May . 1899	.30
153	Napa Con., q.	Cal ..	700,000	100,000	7	20,000	1,120,000	Apr.. 1901	.10
154	National Lead, com.	U. S..	15,000,000	149,054	100	.....	1,341,486	Mar.. 1900	1.00
155	National Lead, pf.	U. S .	15,000,000	149,040	100	260,820	10,840,100	Mar.. 1901	1.75
156	New Elkhorn, g.	Colo..	437,500	87,500	5	.....	1,325,000	June. 1898	.48
157	New Idria, q.	Cal...	500,000	100,000	5	40,000	290,000	Apr.. 1901	.20
158	New Jersey Zinc.	U. S..	10,000,000	100,000	100	400,000	3,200,000	Feb.. 1901	4.00
159	N.Y.& Hon Rosario, s.g.	C. A..	1,500,000	150,000	10	60,000	1,475,000	Mar.. 1901	.10
160	North Star, s. l.	B. C..	1,500,000	1,300,000	1	39,000	156,000	Mar.. 1901	.03
161	North Star, g.	Cal ..	5,000,000	250,000	10	.....	584,850	Nov.. 1899	.20
162	Nugget, g.	Colo..	1,000,000	991,000	1	19,820	74,820	Apr.. 1901	.01
163	Old Colony Zinc & Sm.	Mo...	1,100,000	69,909	10	17,477	85,753	Feb.. 1901	.25
164	Omega, g.	Colo..	1,500,000	1,200,000	1	.....	18,188	June. 1900	.01½
165	Ontario, s. l.	Utah.	15,000,000	150,000	100	.....	13.662,500	Apr.. 1900	.30
166	Original Empire, g.	Cal...	5,000,000	50,000	100	.....	530,000	Oct.. 1899	1.00
167	Orphan Belle, g.	Colo..	1,000,000	1,000,000	1	.....	197,899	Dec.. 1899	.09
168	Osceola, c.	Mich.	2,500,000	95,900	25	.....	3,670,400	Dec.. 1900	3.00
169	Parrot, c.	Mont.	2,300,000	229,850	10	689,550	5,083,375	Apr.. 1901	1.50
170	Payne Con., s. l.	B. C..	3,000,000	2,600,000	1	78,000	1,438,000	Jan.. 1901	.03
171	Pennsylvania Con., g.	Cal..	5,150,000	51,500	100	.....	161,325	May.. 1900	.10
172	Pioneer, g.	Cal...	1,000,000	200,000	5	.....	62,500	Mar.. 1899	.12½
173	Plumas Eureka, g.	Cal ..	1,406,250	140,625	10	.....	2,797,544	Apr.. 1900	.60
174	Pointer, g.	Colo..	1,250,000	1,250,000	1	12,500	12,500	Mar.. 1901	.01
175	Portland, g.	Colo..	3,000,000	3,000,000	1	360,000	3,667,080	Apr.. 1901	.06
176	Princess, g.	Colo..	1,000,000	1,000,000	1	.....	55,000	Feb.. 1897	.00½
177	Queen Bess, s. l.	B. C..	500,000	100,000	5	.....	25,000	July.. 1899	.12½
178	Quicksilver, pref.	Cal...	4,300,000	43,000	100	21,500	1,888,411	May . 1901	.50
179	Quincy, c.	Mich.	2,500,000	100,000	25	300,000	12,270,000	Feb.. 1901	3.00
180	Rambler—Cariboo, s. l.	B.Col	1,250,000	1,250,000	1	.....	105,000	Apr.. 1900	.01
181	Reco, s. l.	B. C..	1,000,000	1,000,000	1	.....	287,500	Jan.. 1898	.10
182	Republic Con., g.	Wash	3,500,000	3,500,000	1	.....	382,500	Mar.. 1900	.01
183	Reward, g.	Cal...	1,000,000	100,000	10	.....	20,000	Aug.. 1899	.20
184	Rocco-Homestake, g. s.	Nev..	300,000	300,000	1	18,000	27,000	Apr.. 1901	.01½
185	Russell-Irwin, z.	Mo ...	250,000	25,000	10	.....	15,000	Oct... 1899	.10
186	Sacramento, g.	Utah.	5,000,000	1,000,000	5	.....	138,000	Oct... 1899	.00½
187	St. John del Rey, g.	Br'zil	3,000,000	425,482	5	.....	13,633,991	Dec.. 1900	.24
188	St. Joseph, l.	Mo...	3,000,000	250,000	10	37,500	3,347,000	Mar.. 1901	.15
189	Santa Rita, g.	Colo..	1,000,000	1,000,000	1	.....	4,000	July.. 1900	.02
190	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	475,000	3,925,000	May . 1901	.66⅔
191	Silver Shield, g.	Utah.	300,000	300,000	1	3,000	4,500	Feb.. 1901	.00½
192	Small Hopes, s.	Colo..	5,000,000	250,000	20	.....	3,325,000	Feb.. 1899	.10
193	Smuggler, s. l. z.	Colo..	1,000,000	1,000,000	1	120,000	1,850,000	Apr.. 1901	.03
194	Southern Boy, g.	Colo..	1,250,000	875,000	1	.....	17,500	May . 1900	.02
195	South Swansea, s. l.	Utah.	300,000	275,000	1	7,500	172,500	Mar.. 1901	.05
196	Squaw Mountain, g.	Colo..	2,000,000	2,000,000	1	.....	10,000	Nov.. 1899	.00½
197	Standard Con., g. s.	Cal...	2,000,000	178,394	10	35,678	3,999,780	May . 1901	.10
198	Standard, s. l.	Idaho	500,000	500,000	1	25,000	2,215,000	Feb.. 1900	.05
199	Stratton's Independ'ce.	Colo..	5,500,000	1,000,007	5	307,502	3,072,854	Apr.. 1901	.18¾
200	Swansea, s. l.	Utah.	500,000	100,000	5	25,000	301,500	May . 1901	.05
201	Tamarack, c.	Mich.	1.500,000	60,000	25	.....	7,290,000	Dec.. 1900	10.00
202	Tomboy, g.	Colo..	1.500,000	300,000	5	.....	956,000	Dec.. 1900	.24
203	Touraine, g.	Colo..	1.250,000	1,250,000	1	.....	87,500	Apr.. 1900	.07
204	Town Topics, g. c.	Colo..	1,000,000	1,000,000	1	5,000	5,000	May . 1901	.00½
205	Union, g.	Col..	1,250,000	1,250,000	1	.....	395,244	Sept.. 1900	.25
206	Union, z. l.	Kas..	500,000	500,000	1	20,000	55,000	Apr.. 1901	.01
207	United, z. l., pref.	Mo...	6,000,000	14.998	25	14,998	45,261	Apr.. 1901	.50
208	United Verde, c.	Ariz..	3,000,000	300,000	10	.....	7,861,180	Dec.. 1900	1.50
209	Utah, g.	Utah.	1,000,000	100,000	10	4,000	185,000	Apr.. 1901	.02
210	Utah Con., c.	Utah.	1,500,000	300,000	5	375,000	375,000	Apr.. 1901	1 25
211	Vindicator Con., g.	Colo..	1,500,000	1,500,000	1	72,500	566,000	Apr.. 1901	.03
212	War Eagle Con., g. s. c.	B.C..	2,000,000	1,750,000	1	.....	545,250	Feb.. 1900	.01½
213	What Cheer, z.	Mo...	225,000	22,500	10	.....	11,250	May.. 1900	.20½
214	Wolverine, c.	Mich.	1,500,000	60,000	25	.....	510,000	Oct... 1900	2.00
215	Yellow Aster, g.	Cal...	1,000,000	100,000	10	.....	459,410	Dec.. 1900	.10
216	Ymir, g.	B. C..	1,000,000	200,000	5	96,000	144,500	May . 1901	.24
217	Zoe, g.	Colo..	1,500,000	1,500,000	1	.....	7,500	Dec.. 1900	.00½
218	...	...	...	...	...	...	...	...	...

This table is corrected up to May 1st. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT WHOLESALE PRICES

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.08
Grains	"	.10
Corundum, N. C.	"	.07@.10
Chester, Mass.	"	.04½@.05
Crushed Steel, f. o. b. Pittsburg	"	.05½
Emery, Turkish flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Naxos flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Chester flour, in kegs.	"	.03½
Grains, in kegs	"	.05@.05½
Peekskill, f.o.b. Easton, Pa., flour, in kegs	"	.01¼
Grains, in kegs	"	.02½
Crude, ex-ship, N. Y.; Abbott (Turkey)	lg. ton	26.50@30.00
Afrodissia (Turkey)	"	23.00@24.00
Kuluk (Turkey)	"	22.00@24.00
Naxos (Greek) h. gr.	"	26.00
Pumice Stone, Am. powd.	lb.	.01⅞@.02
Italian, powdered	"	.01¼
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02½@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.10@.30
Steel Emery, f.o.b. Pittsburg	"	.07
Acids—Acetic, 30% pure	100 lbs.	3.50
30% ch. pure	"	6.00
80% pure	"	7.50
Benzoic, English	oz.	.12
German	lb.	.40
Boracic, crystals	"	.10¼@.11
Powdered	"	.11@.11½
Carbolic, crude, 60%	gal.	.27
Cryst, 37% drums	lb.	.23
Liquid, 95%	gal.	.45
Carbonic, liquid gas	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Hydrochloric, ch. pure.	"	.07
Hydrofluoric, 36%	"	.03
48%	"	.05
Best	"	.25
Nitric, chem. pure	"	.09
Sulphuric, chem. pure	"	.07
Sulphurous, liquid anhy.	"	.08
Tartaric, cryst	"	.28@.28¼
Powder	"	.28¾@.29
Alcohol—Grain	gal.	2.45
Refined wood, 95@97%	"	.60@.65
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.75
Ground	"	1.85
Powdered	"	3.00
Chrome, com'l	"	2.75@3.00
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	100 lbs.	2.60
Sulphate, pure	"	1.50@1.75
Com'l	"	1.15@1.25
Ammonia—Aqua, 16°	lb.	.03
18°	"	.03¼
20°	"	.03¾
26°	"	.05½
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate lump	"	.08¼@.08½
Powdered	"	.09@.09¼
Muriate, gran.	"	.06
Lump	"	.09¼
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.10
Chem. pure	"	60
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09½
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	.16
Arsenic—White	"	.04¼@.04½
Red	"	.07@.07⅛
Asphaltum—		
Ventura, Cal.	sh. ton	32.00
Cuban	lb.	.01½@.03½
Egyptian, crude	"	.05½@.66
Trinidad, refined	lg. ton	35.00
San Valentino (Italian).	"	16.00
Seyssel (French) mastic.	sh. ton	21.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@.02
Chloride, com'l	100 lbs.	1.67½@1.76
Chem. pure cryst	lb.	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.02
Barytes—Am. Cr., No. 1.	sh. ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
German, gray	"	14.50
Snow white	"	17.00
Bauxite—Ga. mines: 1st grade	lg. ton.	5.00
Second grade	"	4.25@4.50
Ala., f.o.b., 1st grade	"	5.00
Second grade	"	4.25@4.50
Bismuth—Subnitrate	lb	1.75
Subcarbonate	"	1.95
Bitumen, "B"	"	.03½
"A"	"	.05
"A" and "B"	"	.04½
Bone Ash	lb.	$ .02¼@.02½
Borax	"	.07¼@.07½
Calcined	"	.25
Bromine	"	.40
Cadmium—Metallic	"	1.40
Sulphate	100 lbs.	2.00@2.50
Calcium—Acetate, gray	"	1.55
brown	"	1.05
Carbide, ton lots, f. o. b. Niagara Falls, N.Y.	sh. ton	80.00
Carbonate, ppt.	lb.	.05
Chloride, com'l	100 lbs.	.75
Best	"	.80@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am.	400 lbs.	1.50@2.00
Belgium	bbl.	1.95@2.20
English	"	2.45@2.55
German	"	2.30@2.70
"Rosendale," 300 lbs.	"	1.05
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported.	"	1.65
Ceresine—		
Orange and Yellow	lb.	.13
White	"	.14
Chalk—Lump, bulk	sh. ton	2.60
Ppt. per quality	lb.	.03¾@.06
Chlorine—Liquid	"	.30
Water	"	.15
Chrome Ore—		
(50% ch.) ex-ship, N. Y.	lg. ton	24.00
Sand, f.o.b. Baltimore	"	33.00
Bricks, f.o.b., Pittsburg.	M	175.00
Clay, China—Am. com., ex-dock, N. Y.	lg. ton	8.00
Am. best, ex-dock, N. Y.	"	9.00
English, common	"	12 00
Best grade	"	17 00
Fire Clay, ordinary	sh. ton	4.25
Best	"	6.00
Slip Clay	"	5.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.75
Nitrate	"	1.50
Oxide—Black	"	2.26@2.30
Gray	"	2.28@2.40
Smalt, blue ordinary	"	.10
Best	"	.20
Copperas	100 lbs.	.40@.45
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
Cream of Tartar—Crys.	"	.19¼@.19½
Powdered	"	.19¾@20
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb. keg		2.50
Blasting powder, B.	"	1.25
"Rackarock," A.	lb.	.25
"Rackarock," B.	"	.18
Judson R.R. powder	"	.10
Dynamite (30% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.16½
(60% nitro-glycerine)	"	.18
(75% nitro-glycerine)	"	.21
Glycerine for nitro (32 2-10° Be.)	"	.13@.13¼
Feldspar—Ground	sh. ton	8.00@9.00
Fluorspar—		
Am. lump, 1st grade	"	14.40
2d grade	"	13.90
Gravel & crushed, 1st g	"	13.40
2d grade	"	12.40
Ground, 1st grade	"	17.90
2d grade	"	16.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump.	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Graphite—Am. f. o. b. Providence, R.I. lump.	sh. ton	8.00
Pulverized	"	30.00
German, lump	lb.	.01¼
Pulverized	"	.01½@.02
Ceylon, common	"	.03¾
Pulverized	"	.04@.08
Italian, pulv	"	.01¼
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground.		
American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Iron—Muriate	lb.	.05
Nitrate, com'l	"	.01¼
True	"	.04
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white	lb.	.07
Com'l, broken	"	.06½
Brown	"	.05½
Nitrate, com'l	"	.06½
gran	"	.85¾
Lime—Com., ab. 250 lbs	bbl.	.70
Finishing	"	.80
Magnesite—Greece.		
Crude (95%)	lg. ton	6.50@7.00
Calcined	sh. ton	14.00@15.00
Bricks	M.	170.00
Am. Bricks, f.o.b. Pittsburg	"	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.03¾
Blocks	"	.06@.09
Magnesium—Chloride, com'l	lb.	$ .01¾
Fused	"	.20
Nitrate	"	0.60
Sulphate	100 lbs.	.90
Manganese—Crude-pow'd 70@75% binoxide	lb.	.01¼@.01½
Crude, pow'd 75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%, Foreign	unit	.26¾
Domestic	"	.30
Marble—		
Flour	sh. ton	6.00@7.00
Mercury—		
Bichloride	lb.	.77
Mica—N. Y. gr'nd, coarse	"	.03@.04
Fine	"	.04@.05
Sheets, N. C., 2x4 in	"	.30
3x3 in	"	.80
3x4 in	"	1.50
4x4 in	"	2.00
6x6 in	"	3.00
Scrap, f.o.b., Dillsboro, N. C.	sh. ton.	25.00
Mineral Wool—		
Slag, ordinary	sh. ton	19.00
Selected	"	25.00
Rock, ordinary	"	32.00
Selected	"	40.00
Monazite—92%	"	140.00
Nickel—		
Oxide, No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.20@.21
Oils—Black, reduced 29 gr.: 25@30 cold test	gal.	.09¾@.10¼
15, cold test	"	.10¾@.11¼
Zero	"	.11¾@.12¾
Summer	"	.09¼@.09¾
Cylinder, dark steam ref	"	.08¾@.10¾
Dark filtered	"	.11¾@.16¼
Light filtered	"	.14¾@.17¾
Extra cold test	"	.21¾@.26¾
Gasoline, 86° @ 90°	"	.16@.21
Naphtha, crude 68@72°	bbl.	9.60
"Stove"	gal.	.12
Linseed, domestic raw	"	.57@.61
Boiled	"	.63
Calcutta, raw	"	.85
Ozokerite	lb.	.11½
Paints and Colors—		
Chrome green, common	"	.05
Pure	"	.16
Yellow, common	"	.10¼
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack, com'l	lb.	.04½
Refined	"	.07
Litharge, Am. powd.	"	.05½@.06
English flake	"	.07⅞@.08
Glassmakers	"	.07½
Metallic, brown	sh. ton	19.00
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02
Orange mineral, Am.	"	.07¾@.08
Foreign, as to make	"	.08@.11
Paris green, pure, bulk	"	.12
Red lead, American	"	.05¾
Foreign	"	.07¼@.08¼
Shellac, "D. C."	"	.30
Native	"	.15
Turpentine, spirits	gal.	.36
Ultramarine, best	lb.	.25
Vermilion, Amer. lead, Quicksilver, bulk	"	.10@.14
Foreign	"	.70
White lead, Am., dry	"	.80@1.00
American, in oil	"	.05
Foreign, in oil	"	.05¾
Whiting, common	100 lbs.	.40
Gilders	"	.54
Zinc white, Am., ex-dry	lb.	.04⅝@.04⅞
American, red seal	"	.06½
Green seal	"	.07
Foreign, red seal, dry	"	.05½@.05⅝
Green seal, dry	"	.07¼@.09⅞
Potash—Caustic, ord	"	.04½@.05
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst	"	.08¼
Powdered or gran	"	.14
Bichromate, Am.	"	.08¼
Scotch	"	.08½
Carbonate, hydrated	"	.04½
Calcined	"	.04
Chromate	"	.35
Cyanide (98@99%)	"	.25
Iodide, bulk	"	2.30
Permanganate, pure cr.	"	.11@.11¼
Prussiate, yellow	"	.14⅝@.15
Red	"	.37
Silicate	"	.06
Sulphide, com'l	"	.10
Quartz—(See Silica).		
Rosin—		
Com. strained (280 lbs.)	bbl.	1.60
Best strained	"	2.80
Medium	"	1.80
Salt—N Y comm fine	sh. ton	2.00
N. Y. agricultural	"	1.50
Saltpeter—		
Crude	100 lbs.	3.35
Refined	"	4.25
Silica—Best foreign	lg. ton	10 00@11.00
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12.00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Silicon—Carbide	lb.	.05
Silver—Chloride	oz.	$0.65
Nitrate	"	.39½
Oxide	"	.85@1.10
Slate—Ground, black	sh. ton	7.50@8.75
Ground, red and olive.	"	20.00
Sodium—Acetate, com'l.	lb.	.04¼
Bichromate	"	.08¼
Chlorate, com'l	"	.09@.09¼
Hyposulphite, Am.	100 lbs.	1.80
German	"	2.00
Nitrite, 96@98%	lb.	.08
Peroxide	"	.45
Phosphate	"	.02½
Prussiate	"	.12½
Silicate, conc	"	.05
com'l	"	.01
Sulphate, com'l	100 lbs.	.70
Gran., puri'd	lb.	.03
Sulphide	"	.01¾
Sulphite crystals	"	.02½
Tungstate, com'l	"	.35
Strontium—Nitrate	"	.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.80
Flowers, sublimed	"	2.05
Talc—N. C., 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French, best	100 lbs.	1.25
Italian, best	"	1.62½
Tar—Regular	bbl.	1.90
Oil barrels	"	3.75
Tin—Bichloride	lb.	.09½@.10
Crystals	"	.20
Muriate, 36°	"	.09
52°	"	.15
Oxide, white, ch. pure	"	.40
Uranium—Oxide	"	2.25@3.00
Zinc—Metallic, ch. pure	"	.09@.10
Carbonate	"	.15
Chloride	"	.05
Dust	"	.06¼@.06½
Sulphate	"	.02@.02⅞

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5.71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	oz.	1.50
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium—Sticks	kg.	1.55
Sheets	"	2.83
Granulated	"	2.38
Powder	"	1.90
Calcium—Elect	grm.	4.28
Cerium—Fused	"	2.02
Nitrate (N. Y.)	oz.	1.25
Chromium—Fused, Elect.	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.20
Cobalt—(98@99%)	kg.	6.66@8.33
Pure	"	30.94
Didymium—Powd.	grm.	3.81
Fused, Elect.	"	5.47
Nitrate (N. Y.)	oz.	2.50
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	2.50
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.75
Indium	grm.	3.57
Iridium—Fused	"	1.07
Powder	"	.95
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	2.25
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—Ingot	kg.	6.19
In wire or ribbon	"	9.99
Powdered	"	5.95@7.14
Sheet	"	9.04
Molybdenum—Fused	grm.	.15
Powder, 95%	kg.	2.62
Niobium	grm.	3.81
Osmium	"	.94
Palladium—Wire	"	.86
Sponge	"	62
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.38
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.43
Selenium—Com'l powder	"	26 28
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Com'l	"	28.56
Chem. pure crystals	"	59.50
Amorphous	"	27.36
Sodium (N. Y.)	lb.	.65
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks.	kg.	107.00
Chem. pure powder	"	83.30
Thallium	"	26.18
Thorium—Nitrate 49@50% (N. Y.)	lb.	5.00
Titanium	kg.	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Wolfram—Fused, elect.	kg.	238.00
Powder, 95@98%	"	1.43
Chem. pure powder	"	6.43
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	2.75
Zirconium—Com'l	kg.	119.00
Nitrate (N. Y.)	oz.	.75

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to April 10. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.